DOCUMENT RESUME

ED 401 901 IR 056 144

AUTHOR	Bertot, John Carlo; McClure, Charles R.
TITLE	Sailor: Maryland's Online Public Information Network. Sailor Network Assessment Final Report Compendium.
INSTITUTION	Maryland State Dept. of Education, Baltimore. Div. of Library Development and Services.
PUB DATE	1 Sep 96
NOTE	140p.; For companion report, "Sailor Network Assessment Final Report: Findings and Future Sailor Network Development," see IR 056 143.
AVAILABLE FROM	Division of Library and Development Services, Maryland State Department of Education, 200 W. Baltimore St., Baltimore, MD 21201-2595.
PUB TYPE	Reports - Research/Technical (143)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Case Studies; Community; Computer Mediated Communication; *Computer Networks; *Data Collection; Focus Groups; Futures (of Society); Information Networks; *Internet; Interviews; Learning Resources Centers; Librarians; Measurement; Online Systems; Program Evaluation; *Public Libraries; Research Methodology; State Government; *State Programs; User Needs (Information); Use Studies
IDENTIFIERS	Maryland; *Sailor Online Public Information Network MD

ABSTRACT

This compendium is a companion document to the Maryland Sailor Online Public Information Network assessment final report, and contains detailed study findings, study data collection activity write-ups, detailed methodologies, data collection tools, and consultant notes on the uses of the study's data collection instruments. The purpose of the assessment of Maryland's statewide computer network was to: (1) evaluate the value of the Sailor network to such target communities as the public library, K-12, business, minority, and state and local government communities; (2) recommend refinements and modifications to the Sailor network to meet the needs of the target communities; (3) measure the nature and extent of target community use of the Sailor network; and (4) create measurement devices that the Division of Library Development and Services (DLDS) can use in the future to assess the Sailor network. Data collection activities included: case studies of the five Maryland library systems, including focus groups and interviews with site personnel; mail and quick response surveys; focus groups and interviews with key Sailor entities; preliminary study result presentations; Sailor network traffic data collection; Sailor Web page assessment in comparison to five other statewide state library-run network Web pages; content analysis of case site, DLDS, and Sailor Operations Sailor-related planning, training, and manual documentation; and pre-testing data collection instruments, continual consultation with, and presentations to the Sailor network assessment Advisory Committee, DLDS, and the Maryland Library Association. Appendices include a cover letter and survey of school library media specialist internet use. (Author/SWC)

Sailor Network Assessment Final Report Compendium

ED 401 901

SAILOR®

Maryland's Online Public Information Network

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September 1, 1996

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Funding for this project is provided by Library Services and Construction Act.

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ACKNOWLEDGMENTS

Many people contributed to the successful completion of this project. First and foremost are the people who participated in the focus groups, who answered surveys, who made themselves available for interviews, and who provided other types of information regarding the Sailor network. The participants included librarians, teachers and school officials, local and state government officials, members of the private sector, and others. We would like to particularly thank our case site liaisons -- Que Bronson, Montgomery County Public Library; Irene Padilla, Harford County Public Library; Kathleen Reif, Wicomico County Public Library; and, Pat Wallace, Enoch Pratt Free Library -- for their tremendous help in coordinating, contacting, and organizing our case site meetings. Were it not for their participation in the project we would not have obtained the excellent information they provided. Nor would we have been able to test, develop, and refine the various data collection instruments. So... to the liaisons and participants, we greatly appreciate your help and involvement.

We also acknowledge the involvement and help from the Advisory Committee that included: Trudi Bellardo Hahn, University of Maryland Libraries, College Park; Pat Hofmann, Calvert County Public Library; Ingrid Yei-Hsieh, School of Library and Information Science, Catholic University; Paula Montgomery, School Library Media Consultant; Danuta Nitechi, University of Maryland Libraries, College Park; and Irene Padilla, Harford County Public Library. These individuals provided a range of assistance to the project that included the review of project documents, pretesting data collection instruments, meeting with the consultants, helping to schedule meetings and interviews with others, and otherwise helping to complete the project. Thanks!

A special nod of thanks goes to Suzanne Eastham, research assistant for the first portion of the project. Suzanne helped us conduct a number of the focus group sessions, was actively involved in a number of other data collection and analysis activities, and participated in the various meetings. Her assistance was invaluable and contributed directly to the overall success of the project.

Within the Division of Library Development and Services (DLDS), we especially acknowledge the help of Rivkah K. Sass, Barbara G. Smith, Denise Davis, Stacey Aldrich, and Sandy Stafford. Prior to her move to the University of Maryland College Park, Trudi Belardo Hahn also assisted the consultants in the assessment project as a DLDS staff member. Their involvement and assistance throughout the project was critically important. Their work, advice, suggestions, and review or key documents and data collection activities greatly improved the overall project products. We also want to thank Maurice Travillion, the State Librarian, for his support of this project.

Also important to one key aspect of the project were Pat Wallace, Agnes Tatarka, Stuart Ragland, Russell Doyen, and Larry Owens of the Sailor Operations Center at Enoch Pratt Free library. These individuals contributed

much time and effort in collecting data, and assisting the consultants produce statistics related to a range of network activities. We especially appreciate the work and assistance from Russell Doyen for his work on capturing information from various log files and organizing them for our analysis.

Finally, we wish to express our gratitude to the staff of the University of Maryland Baltimore County's Maryland Institute for Policy Analysis and Research -- Donald F. Norris, Linda Brown, and Deborah Meehan -- for their tremendous administrative and research assistance in producing this report.

Although many people contributed to the project, the content and specifically, the recommendations offered in this report are the responsibility of the consultants. We hope that both the final report and the final report *Compendium* will assist in the ongoing growth and development of Sailor. We also hope that these two documents will be of interest to others building statement networks who are considering options and strategies for assessing those networks.

John Carlo Bertot
Charles R. McClure
September 1, 1996

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INTRODUCTION

This final report *Compendium* contains the data collection tools, methodologies, and research techniques the researchers used to conduct the Sailor network assessment. The *Compendium* also contains researcher analysis of the used methodologies and data collection tools so that the Division of Library Development and Services (DLDS) staff, and others, can revise the tools and data collection strategies for future Sailor network evaluation activities.

The *Compendium* is a companion document to the Sailor network assessment *Final Report.* The *Final Report* contains study findings and researcher analysis of those findings. This *Compendium*, therefore, is best considered in the context of the evaluation study findings -- it is not intended to provide an overall view of the Sailor network assessment. Rather, the *Compendium* is a data collection tool manual for DLDS and Maryland public libraries to use to conduct future Sailor network evaluation activities.

Each Sailor network evaluation data collection activity is presented in a separate section. This presentation allows for the in-depth discussion of the tools and methodologies pertaining to research team data collection activities. Data collection instruments particular to each methodology are located in appendices at the end of each discussed methodology.

STUDY OVERVIEW

The Division of Library Development and Services (DLDS) contracted with the study team of John Carlo Bertot, Charles R. McClure, and Suzanne Eastham in the fall of 1995 to assess the Sailor network. The purpose of the assessment was to:

- Evaluate the value of the Sailor network to such target communities as the public library, K-12, business, minority, and state and local government communities;
- Recommend refinements and modifications to the Sailor network to meet the needs of the target communities;
- Measure the nature and extent of target community use of the Sailor network, with emphasis on the incorporation of Sailor network-based resources into community activities; and,
- Create measurement devices that DLDS can use in the future to maintain ongoing or periodic assessment of the Sailor network.

The assessment, therefore, focused on the present use and future directions of the Sailor network.

STUDY METHODOLOGY

The assessment team engaged in a number of data collection activities between October 1, 1995 and June 1, 1996 to derive the findings presented in the *Final Report*. These activities included:

- Case studies of the five[1] Maryland library systems that included focus groups and interviews with site
  - Public library administrators and librarians,
  - Local and state government officials,
  - Higher education faculty and administrators,
  - K-12 teachers and administrators,
  - Local business leaders,
  - Members of the press/media, and
  - Internet Service Providers (ISPs);
- Mail and quick response surveys with
  - School library media specialists in selected case sites,
  - Sailor Master Trainers, and
  - The Maryland Association of Public Library Administrators (MAPLA);
- Focus groups and interviews with key Sailor entities, including
  - DLDS,
  - Sailor Operations,
  - Network Navigators,
  - Network Coordination Council, and
  - MAPLA;
- Preliminary study result presentations with the Advisory Committee and at the May 8, 1996 Maryland Library Association annual meeting;
- Sailor network traffic data collection for the month of March 1996, including
  - Overall Sailor usage,
  - Help desk transactions, and
  - Case site Ascend router traffic;

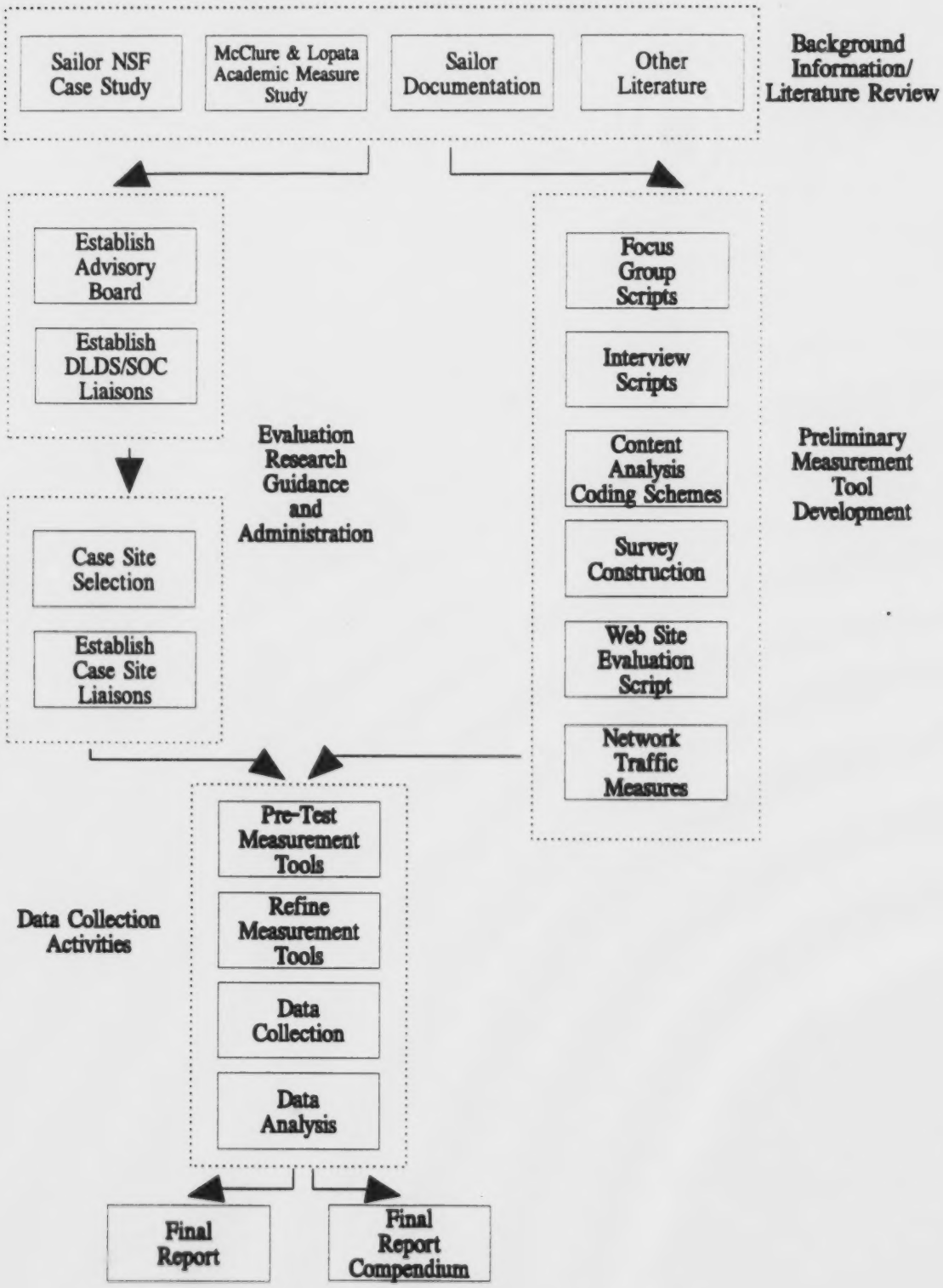
[1]The initial Sailor assessment plan included a four site demographically- and regionally-based case study approach that included Baltimore City, Harford County, Montgomery County, and Wicomico County. The assessment team added Garrett County to the original case site selection to gain a Western Maryland perspective on Sailor.

- Sailor Web page assessment in comparison to five other statewide state library-run network Web pages;
- Content analysis of case site, DLDS, and Sailor Operations Sailor-related planning, training, and manual documentation; and,
- Pre-testing data collection instruments, continual consultation with, and presentations to the Sailor network assessment Advisory Committee, DLDS, and the Maryland Library Association.

Together, these data collection activities provided the assessment team with the ability to identify both general and specific Sailor network operation, management, and technical issues. In all, the study team conducted multiple focus groups and in-person and/or telephone interviews that included over 125 individuals from the Sailor network-related communities identified above (see Figure 1). This *Compendium* presents data collection activity write-ups and tools.

Readers interested in the Sailor network evaluation study findings should refer to the *Final Report*.

Figure 1. Sailor Evaluation Study Methodology.



SAILOR NETWORK EVALUATION FOCUS GROUPS AND INTERVIEWS

INTRODUCTION

As part of the overall data collection strategy for assessing the Sailor network, the study team conducted a number of focus group sessions between November 1995 and January 1996. The selection of the sites for these focus groups was based on guidance and input from the advisory committee, the willingness of the site library to participate in the project and assist in planning the focus group session, and maintaining a geographic and economic balance across the state for participation. The selected case sites were:

- Baltimore City
- Harford County
- Montgomery County
- Wicomico county.

The study team added Garrett County to this original case site list due to Garrett's representation of Western Maryland.

The participants in these focus groups were selected by a liaison in each of the library sites where the focus groups were conducted. The study team encouraged the liaisons to select individuals who were knowledgeable about the Sailor network, had actually used the system, came from varying organizations and settings, and were articulate and interested in the development of Sailor. In all of the focus group sessions, the participants were engaged, active, and provided very thoughtful and useful information. Indeed, most of these focus group sessions continued longer than originally scheduled due to the interest of the participants.

The focus group summaries provided later in this report describe the key issues and topics of interest to participants at those groups. Thus, this section ***reports*** on participant views, opinions, and perspectives/perceptions.

These focus groups oftentimes included tours of library and sailor-related facilities/activities, informal luncheons with selected individuals, and receipt of local documentation and other information from the site. In most instances, the focus group session was preceded with a preliminary meeting between the study team and the liaison to discuss the content of the session. In addition there were a number of instances in which follow-up visits or phone calls occurred after the actual focus session was held. Thus, the study team was able to obtain a significant amount of information about the Sailor network in a relatively short period of time.

The focus groups were designed to be the first major data collection activity of the project and had the following objectives:

- Identify key topics and issues of interest to various types of users of the Sailor network

- Compare and contrast the degree to which the topics and issues raised were of interest to one or two stakeholder groups or were of interest to everyone

- Provide guidance to the study team for more detailed data collection on the more important topics and issues identified

- Increase awareness of the participants of the evaluation project and the role of the study team in this project.

Thus, the focus groups were exploratory in the sense that they (1) began to define the key topics and issues of interest to most participants, and (2) they provided future direction for the study team to explore selected topics and issues in more detail.

Appendix A contains the basic focus group protocol used by the researchers throughout the focus group data collection activities. This script enabled the researchers to standardize focus group questions across the evaluation project's case sites and explore key Sailor network issues. Appendix B contains the focus group participant questionnaire used by the researchers to collect participant demographic and additional Sailor network key issue data.

Harford County Data Collection Activities
Focus Group and Interviews
November 30, 1995

On November 30, 1995, the study team conducted a focus group with Harford County public library librarians and administrators, public and private school (K-12) librarians, community college librarians, and county government officials. The focus group session lasted 2 hours, and there were 12 focus group participants. The study team explored a variety of topics concerning the Sailor network (see Appendix A for a listing of general topic areas). Presented below are the key findings of the focus group presented by topic area.

Focus Group Issues by Topic Areas:

Overall View of the Sailor Network

Participants commented on their overall impression of the Sailor network. Their comments can be categorized into three aspects of the network: inception, management, and technical.

Inception of the Sailor Network

Participants acknowledged that the Sailor network was an innovative, challenging, and insightful venture that enabled public libraries in the state of Maryland to be on the forefront of the electronic networked environment. Participants realized that, through Sailor, the public library system in Maryland was on the cutting edge of providing state-wide public access to Internet-based information resources. Furthermore, public libraries and patrons were now able to connect to other libraries through the Sailor network. No one disputed the conceptual value of the Sailor network.

In addition, participants agreed that the Sailor network created a basis for discussion and collaboration between a variety of community-based organizations (e.g., public libraries, county government, K-12 schools, and higher education).

Management Issues

The Sailor network is now in its second year of existence, with the final public library system gaining its Internet connection as of December 1995. The incremental nature of Sailor connectivity throughout the public library system provided benefits and problems to both the Sailor network planners and individual public library systems:

- An incremental implementation approach to Sailor connectivity provided Sailor network planners with the ability to install, discover and correct bugs, and develop experience with connection issues prior to moving on to the next

installation. It also allowed network planners to take advantage of new and emerging telecommunications, hardware, and software technologies.

- For individual public library systems, however, the incremental installation approach created:

  - an environment of increased service expectations as Sailor network managers gained experience with technical difficulties;

  - enhanced network capability expectations such as graphical access to the Internet; and,

  - an uneven playing field across public libraries as those libraries with more Internet experience and resources were moving far beyond basic Sailor connection services.

The incremental approach to Sailor network connectivity, therefore, produced a tension between the Sailor network planners and the public library systems. Network planners appeared to be in a "Sailor baseline" mode, while public library systems (and the communities that the public libraries served) were in a "what's next?" mode.

Additionally, participants stated that the Sailor network was a very limited form of access to the Internet. Whether users access Sailor through gopher or the World-Wide Web (Web), users were limited to what information Sailor newtork administrators made available. It was in this context that focus group participants raised the issue of content control -- who or what should determine what information is made available through Sailor. Participants felt that there was not an open and/or organized forum through which to suggest and make available additional electronic resources through Sailor. One participant commented that the newly formed Sailor Topical Reviewers group, on which there is wide representation from Maryland counties, is the means through which some of the control issues are to be resolved (more on this in the Governance section).

Technical Issues

At present, there are three flavors of Sailor, two of which are text-based (gopher and Web via Lynx), and one that is graphical through the WWW. Five main issues arose concerning technical aspects of the Sailor network:

- *Consistency*. Due to the differences in Sailor servers (gopher v. Web; text v. graphical), different information is sometimes available to users. Certainly, the display of information is different, with graphical being the most desirable. Sailor, however, was and remains a text-based network service. Graphical access to Sailor is only available to those users who purchase commercial services that provide such services OR through some public library systems

that offer such access independently of Sailor (i.e., Carroll and Baltimore Counties).

- *Reliability.* Participants expressed concern over the network's reliability along three dimensions: (1) Overall Sailor network performance -- there are inconsistencies in the availability and performance of the network, with extremely slow response time during the afternoons; (2) Modem port availability -- the Ascend router holds only 16 modem connections and these are beginning to reach capacity; and (3) Content -- the Internet, it was acknowledged, is not an organized source of information. Internet sites come and go and information is not always relevant to patron interests. Many lamented that Sailor does not provide access to quality, reliable information (participants, however, acknowledged that this is a factor of the Internet, not just Sailor operations).

- *Ease of use.* Different user communities have differing needs in terms of access to Sailor network information. School librarians commented that Lynx and gopher were not appropriate for elementary school students. Lynx and gopher are, however, able to be used effectively by high school students. Public librarians commented that a majority of users did not find Lynx particularly intuitive and, as such, was difficult to use. Participants were on the whole concerned with Sailor's user friendliness.

- *Openness.* As indicated in the "Management Issues" section, Sailor does not provide open access to the Internet. There is no "go to capability" as one librarian put it. Users are, therefore, limited to accessing Internet-based resources that are linked at the Sailor network server level. [Note: this issue was resolved in May 1996].

- *Technical support.* All users, particularly those responsible for maintaining community-based Sailor connections and training both organization staff and the public, lamented the inadequate technical support provided by Sailor Operations. While all were aware of the funding constraints faced by Sailor Operations, participants wanted more responsiveness to network-based technical problems as well as an expanded help desk function -- to include an 800 number.

These technical issues highlight the need for an enhanced management mechanism through which various Sailor network user communities can suggest changes to Sailor network content, configuration, and interface (more on this in the Governance section). They also demonstrate the need for Sailor network support services -- training and technical -- to Sailor sites. Finally, there is a need to have a unified interface to the Sailor network.

The Sailor Network as an Internet Gateway

Respondents questioned the role of public libraries in general and Sailor in particular as gateways to the Internet. Essentially, two views surfaced -- public

libraries as introducers of the Internet for the public and public libraries as viable Internet access alternatives for the public.

- *Public libraries as baseline Internet service providers.* Some librarians suggested that an appropriate role of public libraries is to "wet the appetite" of the electronic network access-seeking public by providing basic access to quality electronic information (e.g., federal, state, and local government data). Participants expressing this sentiment were less concerned with Sailor's ability to provide cutting edge access to the Internet than providing a reliable (up and running), adequate (bandwidth) connection to quality (primary source) information. In essence, these librarians felt that the public library was a good place for people to gain access to and learn the basics of the Internet, but then move on to commercial service providers for full Internet access and services.

- *Public libraries as alternative Internet providers.* Other librarians and library administrators indicated that public libraries should, based on public expectations and availability of technology, provide Internet access that rivals that of commercial service providers (not to necessarily, however, provide a full range of Internet services such as e-mail). Indeed, the library director stated that users experience a level of frustration with Sailor's limited Internet access -- a frustration that causes patrons to seek commercial accounts and, subsequently, not return to the library for Internet access.

The public library-as-Internet-provider/access point dichotomy raises issues concerning public library roles in an electronic environment. The public library, in many ways, is a community-based equalizer of information -- all who want access to information can generally get it through the public library regardless of socio-economic status. If, however, libraries do not provide comparable Internet services to commercial providers, those who can afford commercial accounts will have higher quality and overall greater access to electronic resources than those who must rely on public library network services. Additionally, should the public library serve as a public training center only to have patrons leave for higher quality network services, the public library will never regain its personnel and technology investments -- staff time expended on staff and public access training does, as one participant stated, the "dirty work," for commercial network service providers, enabling the commercial providers to profit from public library investments.

Needed Enhancements to the Sailor Network

Participants were asked to recommend enhancements to the existing Sailor network. They had the following recommendations, grouped by topic area:

- *Content.* It was agreed by participants that Sailor needs to be enhanced to survive. One participant stated that even though some data on the government was "free and available, a great deal of data is not there, and to get it would be

expensive." For example, participants detailed the need for access to fee-based databases in the business, commerce, and health areas. Access to such databases, one participant stated, "would make me want to use Sailor more as a reference tool."

A related issue to accessing different fee-based databases and information services raised by participants was that of site licensing. Participants acknowledged the difficulty of establishing adequate site license agreements in the networked environment, largely due to vendor inexperience with this new medium. Most felt, however, that site licensing -- and the pooling of resources -- would alleviate the problem of cost for accessing such services.

- *Interface.* In addition to the issue of specific information available through Sailor, participants expressed the need for a cleaner and more intuitive Interface to Sailor. According to some, the Sailor Home Page is confusing, and there is no explanation of where to go for what (e.g., Yahoo is available through the Tools screen, but no one really knows this; some cannot locate the Tools screen). A public school librarian stated that "due to the time it takes to figure out exactly where your information is, that it is easier to simply go to Statistical Abstracts or a dictionary."

- *Support.* Based on the unintuitive nature of Sailor, and the problems identified earlier with receiving help from Sailor operations, it was agreed that there was a need for adequate on-line help and a clearly displayed help desk phone number (an 800 number, as mentioned earlier).

- *Vision / Marketing.* The current marketing approach to Sailor, according to some, sends an unrealistic expectation to the public that they can "connect to the Internet." One participant expressed the concern that this impression created false expectations and a sense in patrons that "Sailor does everything (similar to a commercial provider)." In essence, participants stated that there was a gap between Sailor's existing capabilities and those that are promoted by Sailor operations. A specific example that participants cited was the Sailor marketing video. Most agreed the video misrepresents Sailor's abilities.

  The discussion of marketing, however, seems directly linked to the Sailor network's lack of clear vision. When asked, the focus group participants could not clearly identify Sailor's vision/purpose. One participant stated that, if anything, the Sailor video should be part of the vision of Sailor -- what it will be in the future.

Sailor Network Governance

A recurring issue throughout the focus group was that of Sailor network governance. Governance, as discussed, is the multi-dimensional governing mechanism for Sailor network operations, content development, technical support, and funding. As Figure 1 illustrates, there are multiple hierarchical levels to the management of Sailor that includes public libraries, local

government, DLDS, the Maryland State Department of Education (MSDE), and state government.

Public Library ----> Local Government -----> DLDS -----> MSDE -----> State Government

Figure 1. Multiple levels of Sailor governance.

Moreover, within each level of governance, there are key stakeholders that can and do influence the Sailor network. Due to such a complex governance structure, participants found it difficult to determine how to impact the day-to-day operations, future directions, and general development of the Sailor network.

As best as could be identified, Sailor network governance is apparently through DLDS. When asked how anyone made management decisions, it was stated "they don't." One participant pointed to the existence of the Sailor Network Managers Group and Network Cloud Committee. In the end, however, final decisions appear to rest with DLDS. Particularly problematic was that it appeared that DLDS was in control of local government information as well. It was agreed that there must be a decision-making process overall, but one in particular that allowed local communities to manage their county information.

Due to the lack of formal procedures regarding Sailor network content, there was serious concern over the quality of Sailor-based information. Furthermore, participants felt a genuine lack of network management control For example, there is no way for the library to measure local Sailor use. Since the router is Sailor Operations' responsibility, the library cannot simply go in and modify the router. Although requests for metering software have been made to Sailor Operations, there is no follow-through or formal request mechanism.

Finally, with the lack of a formal governing body for Sailor, there is no policy-making board. Issues such as censorship and intellectual property were cited as key concerns facing public libraries in the networked environment. There is, however, no means through which to establish Sailor-wide policies regarding such issues.

At the local level, the public library, in conjunction with the community college, public schools, and county government, are working to create a management group for the library's HOLI bulletin board system. The currently existing Knowledge Network, of which the library is a part, is the defacto technology coordination board. The county wants to formalize its technology development and planning process. The county government, however, is not doing much with technology at the moment, according to one local government representative. Through Sailor, though, this appears to be changing (Sailor, in essence, is forcing the issue).

Communications

A key issue directly related to governance raised during the focus group was that of communications between Sailor Operations, DLDS, and the library systems. Participants expressed concern that Sailor network management was handled "without us," at worst or "with only partially informing us" at best. Participants further stated that there appeared to be no clear and established method for the library systems to be informed of Sailor network developments, updates, direction changes, etc. One participant commented that this may be a result of no overall communications network, too many Sailor network management committees, not enough library system participation in those committees, and even poor communications within the library systems between Sailor network committee participants and the rest of library staff.

Future Funding

Participants also raised the issue of continued and future funding for the Sailor network. Some saw the specter of possible library system-Sailor conflict given the current management structure of Sailor. Library administrators are beginning to express serious concern in continuing to fund Sailor "with our money" while not having any real -- or very little-- control over the management, content, and services components of Sailor.

The Sailor Network and the Transformation of Job Duties

School librarians noted that teachers must know and teach on-line operations because children need to know this for the future. It was agreed that this increased rather than decreased their workload. New skills are imperative for teachers. Few teachers, however, were actually going on-line for course curriculum-related information.

One librarian echoed the sentiment of workload increase, particularly with the user training and help component required for Sailor. This librarian stated that the amount of help provided is directly related to what patrons know. Some may not know much because self-training is extremely time-consuming.

One community college librarian stated that due to home access, there is more responsibility for calls about problems, and the overall appearance is that librarians are less competent. This librarian also pointed out that colleges require computer use so knowledge is a must.

One public librarian went as far as to say that "we are really not librarians anymore; we are instructors of the Internet." To this librarian, the entire library profession was evolving from a print-based profession to that of electronic networks.

In addition, librarians felt a great deal of pressure to learn everything that is out there -- pressure that will only increase as people become more familiar with

the Internet. Indeed, one librarian stated that "the Internet has taken away the librarian specialties; Sailor and the Internet have changed all that, and there are really no experts." This librarian stated that even for some experienced users, they may have access but can not find what they want. Again, the perception of the public is that the librarian should be able to find this (an issue tied to marketing).

Staff and Public Instruction

Staff and public training on the Sailor network remains a problematic issue. Harford County Public Library provides no formal training courses either for staff or for patrons. Furthermore, there are no instruction manuals on the use of Sailor and/or interesting resources available through the Internet. Simplified "how to" sheets exist, but they are outdated.

The lack of formal training is a particularly interesting issue, given the school and public librarians' identification of a major shift in librarian responsibilities from print- to electronic-based resources. This lack of training indicates a major gap between current skills and skills required in the future. This gap translates the public as well -- if librarians are not adequately able to operate Sailor, then the public that is dependent on librarians for help with Sailor will be unable to interact with the Sailor network.

Library System Socioeconomics

A recurring theme throughout the focus group was that Harford County is not as wealthy as other counties throughout the state. Due to this lack of wealth, some librarians expressed a concern that Harford County is not providing what other counties are providing in terms of electronic- and Sailor-based services. For example, Baltimore and Carroll counties offer Internet accounts and provide their own Web services separate from Sailor.

Another concern was that of taxpayer willingness to subsidize Internet Access for all county residents. Librarians are fearful that wealthier patrons will purchase commercial provider accounts and believe it unfair to pump money into Sailor for something they themselves do not need.

Although participants identified numerous aspects of Sailor that required modification, participants ended the focus group by reiterating the positive effect Sailor has had in:

- Providing public libraries with access to the Internet.
- Serving as a community catalyst that enabled normally stand alone institutions -- public libraries, schools, county government -- to work together and develop a community-based information infrastructure.

In the view of many participants, these two accomplishments alone extolled the value of the Sailor network.

Summary

The focus group centered less on what Sailor was than on what Sailor should be and how best to affect the process that would set Sailor on a new course. It was clear that Sailor required new direction, management mechanisms, and technological capabilities. It was unclear to the participants, however, how to affect such changes to Sailor. An underlying theme that surfaced was that of perhaps decentralizing some of the Sailor network management responsibilities to individual library systems. This idea is one that requires further exploration, and raises concerns that not all library systems are created equal in Maryland -- therefore, creating uneven access to networked resources throughout the state.

Wicomico County Focus Group
January 4, 1996

On January 4, 1996, the study team conducted the second focus group with Wicomico County public librarians and administrators, community college librarians, public school (K-12) librarians, local business people, and representatives from a local, commercial provider. A Somerset County librarian and administrator also sat in on the meeting. The focus group lasted two hours, and there were twelve participants.

Focus Group Issues by Topic Areas:

Overall View of the Sailor Network

Due to problems with the technical infrastructure on the eastern shore, most participants expressed an overall negative view of the Sailor network. While the study team attempted an assessment of Sailor network content, much of the meeting focused on reliability issues.

Management and Planning Issues

The participants felt the planning and management of Sailor was, and is, inadequate. A concise planning process, if there was one, did not include any members of the focus group, and there is uncertainty about the role and future of Sailor. There was also concern about the decision-making process for Sailor. There really is no process that can be defined. The participants stated that they are not in control of the evolution of Sailor. The recent resolution passed by Directors for doing a re-organization of Sailor supports this view. Additionally, it was agreed that it would be best if the governor's office simply took control of Sailor.

A complaint which was echoed by several participants involved the marketing strategy for Sailor. Apparently, the State published the connectivity of Sailor in the local paper, and then there was no access. The public's expectation of Sailor and the subsequent lack of connectivity caused a great deal of embarrassment for the library. A library administrator for Somerset County never publicized Sailor, and has no intention of doing so due to the network's lack of reliability.

Technical Issues

Sailor was up and running in the Wicomico system during the study team's visit. However, this has not been their reality. The month of December 1995 has proven to be the only time in which the Sailor network has been consistently up. While this is true only for dial-in patrons, it appears the in-library system has been up consistently.

The impact of the Sailor network's technical unreliability may be immeasurable with the Wicomico system. There is intense distrust of the

network, and it was commented that the down time "made them look bad." In any event, 4 main issues surfaced regarding the technical aspects of Sailor:

- *Consistency*. It was expressed that the text-based Sailor is not what the public expects or wants. Indeed, even the participants stated that, due to graphic ability, they go through their commercial provider (ICNET) and access Sailor.

- *Reliability*. As mentioned, the unreliability of the Sailor network on the eastern shore was considered the most troublesome issue. There is much anger about the length of time Sailor has been down, and this can not help but impact on the overall assessment in Wicomico County.

- *Ease of Use*. The user friendliness discussion of Sailor revealed two polar views. One participant stated that most patrons find the Sailor network hard to use, and there was agreement on this point. On the other hand, it appears librarians feel it is user friendly. Perhaps this is due to daily use and the training librarians receive as searchers for information.

- *Technical Support*. The help desk at Pratt was considered to be of limited usefulness. This opinion was prevalent, regardless of the nature of the requested help. In addition to poor response and toll call fees, the group questioned the competency of the help desk. Only one participant said he received an appropriate response from the help desk, but admitted that his question was very simple. He also added that he believes many patrons do not have the expertise to utilize Sailor, and if the help desk does not help, the patron are being set up to fail.

There is a lack of effective communication between Sailor Operations and Wicomico. Participants stated that their problems were not resolved, not responded to, and for which "nobody at Sailor really care about" solving. Two specific examples were cited. One involved a promise for a broker's license for over a year. They are still waiting. The other problem was a request for an e-mail account. After three such attempts, the individual gave up. In addition, others felt here was just too much "help" required, and they could not keep up.

Content

While it appears the administrators have based their opinions of the Sailor newtork on technical issues, the reference librarians have a more positive view of the actual content. Managers see Sailor as a disaster which destroyed their credibility within the local community, while librarians and some users find it to be an important tool. One librarian stated that she uses Sailor everyday and finds what she needs. Also, this librarian uses Sailor to access the Internet and made an interesting comment - she is adjusting her behavior not to jump into the huge space that is the Internet when she can readily get what she needs from Sailor. She said that Sailor is "faster and slicker," but admitted her high level of comfort and familiarity with the system.

There was agreement that the Sailor network could play an important role in organizing and providing state of Maryland data and services, and local data. An attorney in this group expressed his disappointment with the content of the Sailor network. He said there is a lack of legal information, and that court cases should be available. Some state systems are selling there data bases, however, Maryland is not purchasing them.

Related to the overall discussion of content is the controversy surrounding the development of the Interlibrary Loan (ILL) on the Sailor network. Some participants believe that the ILL component was the key factor in the development of the Sailor network. However, the ILL component of Sailor is a "mess," and one individual noted that there were 4 ILL systems in the state. The overriding complaint here is Sailor's inability to search across catalogues. Apparently, OCLC searches across, but it is too expensive to purchase. The librarians feel they are forced to use the Sailor ILL even though it is unreliable and "costly."

The Sailor network as an Internet Gateway

Respondents in this group admitted to using Sailor approximately 5% of the time for content. The other 95% of the time, they are using Sailor to access the Internet or use e-mail. Most of the participants are either purchasing, or were donated, Internet services through the local, commercial provider, ICNET. The interest and involvement of ICNET has affected the development of Sailor on the eastern shore. The company has provided free accounts to libraries, schools, fire and rescue employees, and some non-profit organizations. The connections have been much more reliable that the Sailor connections. ICNET sees Sailor as unfair competition from the government, hindering its ability to sell connectivity. ICNET has proposed provision of ISDN to the library for $300 per month.

Needed Enhancements of the Sailor network

The participants did provide some recommendations about enhancements for the Sailor network. It is important, however, to keep in mind the anger these individuals expressed during the meeting. It may be unlikely that they can be actively involved in promoting the Sailor network. The recommendations include:

- *Content.* Participants agreed that Sailor needs to develop the Maryland state government and government information services.

- *Decentralization.* It was felt that the help desk and the overall power structure of Sailor needed to be decentralized. Provision of regional technical support and help is wanted, rather than library system being wholly dependent upon Pratt.

- *Licensing.* Overall agreement was expressed regarding licensing agreements with data base owners for provision of more access to information. It was also acknowledged that this would be much cheaper for the library.

- *Per capita monies provided in lieu of Sailor.* The participants agreed that too much money had gone into Sailor, without adequate benefits. Many agreed that receiving a per capita dollar amount would be better than continued support for Sailor.

Sailor Network Governance

Discussion of governance proved to be convoluted and tied to an undefined organizational hierarchy, complaints about Pratt, and financing. There was much confusion and discussion about the lack of a clear organizational structure, and the roles of individuals involved with the network. Also, many committees have been established and disbanded without a clear indication of what the committees were to accomplish. At this point, no one is aware of how many committees have existed, now exist, or who may have been, or is, sitting on them. Due to this confusion, it was expressed that libraries are "not in control" and do not know how to affect control over the development of Sailor.

While the organizational structure of the Sailor network is unclear, the assumption that Pratt is fully involved and in receipt of support from DLDS has created a great deal of animosity. Indeed, even though the participants are unaware of the level of monetary support and control given to Pratt, the assumption is that they are in control of the Sailor network.

At this point, it may be important to discuss the politics of the eastern shore, as it may relate conceptually to Wicomico's perception of Pratt and DLDS. There is an underlying them that the eastern shore is always slighted in relation to statewide resources and government assistance. Most participants felt that Sailor was no exception. Indeed, one participant asserted that the metro area "gets everything" because that is where the legislative body of Maryland resides.

Staff and Public Instruction

The only applicable discussion here involved the K-12 group. A Master Trainer will begin telecommunications training for teachers in February. The training will cover information access in general and the Sailor network. Interestingly, the hardware is not in the school system yet. The Trainer believes they need to lay the groundwork for their desire and be ready when the technology is available. Few schools are using the Sailor network, but when the do, it is accessed through the Internet (ICNET) -- the student prefer the graphics.

One library director stated that the schools have enlisted task forces for connectivity, and they are in the process of developing a plan.

Library System Socioeconomics

As mentioned previously, the eastern shore considers itself out of the loop where state resources are concerned. In addition, several participants acknowledge that Wicomico County can be considered a rather depressed area.

One participant sees the role the library and the Sailor network can play with respect to technological advancement and overall development in the area. This participant believes this can be accomplished by providing assistance with an understanding of technology for everyone.

From this line of thinking, the discussion moved to "Sailor as a Safety Net" for those individuals unable to afford their own computers. A comment was made that the library should not become the "public housing authority" for the Internet. Further comment was made what role the library plays in providing the Sailor network to those individuals without computers. One participant argued that there are actually 3 groups of users that need to be considered; those without computers, those with a 286 or 386, and those with new, high speed, highly capable computers. It was agreed that the Sailor network was appropriate for those individuals without a computer and for those individuals with a text-based, dial-in capability. However, one participant argued that the group with the newer, faster computers were not getting on-line through the Sailor network, because they probably have a commercial provider with graphics.

This entire discussion of the role of the Sailor network in the community emphasized the lack of knowledge about the direction of Sailor, its purposes, and its goals.

Summary

Underlying the focus group session in Wicomico was the issue of network reliability. Furthermore, there was a general sense that the service and reliability issues of Sailor on the Eastern Shore were part of Sailor's Balitimore-centric view of the state. In this view, the Sailor network does not represent and/or service all quadrants of the state equally, but rather focuses on the Baltimore-Annapolis corridor.

In this climate, therefore, the discussions and issues centered less around the information content and service aspects of Sailor than the technological composition of the network and, subsequently, how library systems could address issues of network service, governance, and control.

This created an interesting situation for Wicomico Public Library. On the one hand, Wicomico was hopeful that the Sailor network would become more reliable, thus enabling the library to provide Internet-based services to the community. On the other hand, Wicomico was using the Sailor network's lack of reliability to leverage relationships with local government officials and network providers to, if necessary, build a separate Internet connection that would completely bypass Sailor. This situation remains unresolved. Since the visit, however, the Sailor network connection has been in operation on a more regular basis.

Baltimore City Focus Group (Enoch Pratt Free Library) January 31, 1996

On January 31, 1996, the study team conducted a focus group with Enoch Pratt Free Library staff, administration, librarians, and trustees as well as state and city government employees, and public school library media specialists. The focus group took place at the downtown Enoch Pratt facility, and occurred between 10:30AM and 12:30PM. The focus group covered a variety of topics, and presented below is a summary of the key issues identified under those topic areas. A total of 15 persons participated in the focus group.

Benefits and Importance of the Sailor Network

The participants had a number of comments and examples of the benefits resulting from the Sailor network. Such benefits included:

- *Sailor provided libraries in the state with additional political clout.* Sailor brought public libraries to the forefront of the state's information infrastructure development process. Indeed, in many ways, participants felt that Sailor spearheaded that process by being on the "leading edge" of infrastructure development.

- *Sailor served as a catalyst to encourage libraries and others in the state to transition to the electronic networked environment.* With the Sailor infrastructure under development and in place, many localities began looking at ways to take advantage of this new media for making information available to various communities.

- *Greatly increased citizen access to electronic information.* Through Sailor, Marylanders now had access to local, state, national, and international electronic information resources.

- *Provided "free" access to citizens who might not otherwise been able to access the network .* A key factor for Baltimore City is equity in access. Sailor contributed to a level playing field by being a "free-to-user" information service.

- *Increased the availability and knowledge of individual library collections across the state.* Maryland libraries have several special collections that are now available through Sailor. This has both increased the public's awareness of these collections as well as the demand for access to such collections.

- *Saves time when you can access information from home or from the office.* Sailor is available 7/24 from multiple locations. This provides near instant access to information when individuals want it rather than when institutions want to make it available.

- *Forced the libraries to think regionally in terms of resource sharing, collection development, and services.* Sailor made librarians realize that libraries were a "global" resource and, as such, had resources that others would find useful. Alternately, librarians realized that through electronic networking, not all libraries needed to duplicate collections. Rather, libraries could specialize in particular types of collections, make those collections available to others via Sailor, and get access to the special collections of other libraries -- thus eliminating duplication of effort and resource expenditures.

- *Increased the public's awareness of the Maryland public library system, what it contained, and the services it provided.* Going hand-in-hand with raising state and local governments' awareness of public libraries is that of public awareness. Sailor served to enhance the stature of public libraries in the eyes of the public as an information service provider in a variety of formats and mechanisms. Through Sailor, the public library is able to reach more segments of Maryland's population and they, in turn, are more aware of the offerings of public libraries.

- *Provided more up-to-date information than could often-times be obtained in print versions in the library.* Sailor-based information, particularly for that of state and local government, is generally current and not beholden to "print dates." For example, an electronic directory of state employees could be as current as yesterday, whereas the print version would be months old.

- *Public intrigue over Sailor and the Internet brought the public in for training.* Curiosity as to the Internet and Sailor served to both bring people into the library who might otherwise not come to the library and build rapport between libraries and the communities they serve.

- *Training was offered in the various libraries to assist patrons use Sailor.* Such training exposed users to Sailor as well as to the vast resources of the Internet.

There was general agreement that these were significant benefits and that the state was "better off" for having developed the Sailor network.

Problems and Concerns with the Sailor Network

Despite the numerous benefits and contributions of the Sailor network, there remain a number of problems and concerns yet to be addressed:

- *There is a lack of adequate computer and telecommunications infrastructure in the Baltimore public school system.* Public schools generally have computers, but they are not capable of meeting the needs of multi-media applications. Furthermore, while many schools may have computers, the computers lack modems to access Sailor. A participant

from Baltimore's school system stated that there were 12 modems in Baltimore City Schools for 250 schools.

- *The promotion of Sailor and what it could do raised unrealistic expectations from the public.* In promotional material, Sailor promised to be "one-stop access" to all the information needs of Marylanders. This promise is as yet unrealized, creating a public relations problem for librarians in direct contact with users.

- *Need graphical user interface* [although some thought keeping Lynx for speedier access would also be necessary]. While participants identified appropriate uses and the need for text-based access to Sailor, all claimed the need for graphical access. Participants saw graphics as the way to go in the future, as users want this feature today.

- *Takes a lot of time and effort to develop the training and provide the training needed to the staff and the public.* The Internet, and subsequently Sailor, is a new information environment for staff and patrons alike. To develop competence with Sailor requires training, and training is a costly resource investment -- both in terms of training development and provision.

- *There needs to be more/better self-tutors on Sailor so the public can train itself.* Sailor is in desperate need of on-line tutorials and other self-taught instructional material. Libraries do not have the resources needed to provide comprehensive training for users and staff.

- *Make PPP available.* Users are clamoring for PPP connections. A big debate ensued, however, over whether public libraries should provide such access services when there are numerous private providers that provide such services at reasonable costs to users.

- *Add more content and services to Sailor.* Participants commented that Sailor needed more local and state government content -- for which development is in progress over which Sailor does not necessarily have control (except as the catalyst mentioned in the previous section). Furthermore, Sailor is in need of additional information services such as on-line databases, encyclopedias, etc.

- *A better understanding of how to integrate Sailor and other types of electronic sources into the basic reference process is needed.* Participants stated that Sailor is relatively new and that librarians had not had the opportunity to fully adapt to Sailor as a reference tool. This is an evolutionary process, one that will require greater "automatic" use of Sailor.

- *Sailor lacks a database of **all** state library system collections.* This forces librarians to search individual library holdings separately -- a very arduous

process. Participants commented on the need for a unified database of library collections to streamline the search process.

The sense of the group, however, was that these issues could be addressed and resolved in the future.

Sailor and K-12

An individual from the city schools stated that "Sailor is the most significant contribution to Baltimore Schools in 27 years" [the number of years this person had worked with the schools]. The potential for impact by connecting the schools to Sailor was unbelievable. The issue is the need for obtaining and providing more computers and modems to make the connections possible. Only 12 of 250 city schools have connections. With the per capita support for students at $1.50 as opposed to $15.00 elsewhere in the state, better integration and use of Sailor in the Baltimore schools is essential. The school system cannot afford to build individual school system collections. The Sailor network, therefore, is a viable alternative to provide students and teachers with access to current and valued information resources.

Defining "Sailor"

Using the term "Sailor" to describe the network was problematic for some participants. What ***exactly*** was Sailor? The consultants proposed that participants think about the Sailor network as containing the following key components:

- The technical infrastructure
- The content or resources made available
- Specific services provided by the network
- The management and governance of the network.

The participants found these categories to be very helpful in thinking about how to describe and define the parts of the Sailor network.

Sailor Network Governance

There appears to be poor communication between Sailor Operations and the individual libraries and library directors. There is some confusion as to what specifically constitutes the Sailor network organization chart and the responsibilities of the various committees. There is also some confusion as to which people in Sailor Operations do what for the Sailor network as opposed to having responsibilities for Pratt.

Library directors may feel that they are "out of control" on the development of the Sailor network, i.e., the network evolves and "things happen" without their knowledge or understanding. One person commented that a problem is that some

directors simply may not understand the new information/network technologies and that spillover to the Sailor network makes a bad situation worse.

Some suggested the need for establishing a governing board. Such a board would have representatives from various stakeholder groups and perhaps recognizing some geographic representation as well. It is important to clarify the governance, improve communication, and clarify the means by which Sailor development and decisions can be affected.

Sailor Costs

There is a perception that Pratt is able to leverage Sailor network resources for its own benefit. One person commented that the specific Sailor costs and expenditures can be itemized. The problem, as this person saw it, was that Pratt was forced to provide a broad range of "in-kind" support that no one else understood or realized. There is a need for these budget numbers and the in-kind support from Pratt [as well as other libraries] to be made more explicit.

Unrealistic Expectations from Librarians

It is likely that many librarians and library directors simply did not understand the depth and detail required to build the system. In effect, on person stated, the technical base of the system is now complete or about to be complete. Library directors do not understand why it took so long for the system to be built.

Bell Atlantic as a Competitor

To some degree, the Sailor network is a competitor to Bell Atlantic as a provider. Further, it is "unfair competition" since the Sailor network does not have to deal with a telecommunications regulatory environment with which Bell has to deal. Sailor as a "provider" was a new thought to some at the focus group. In response, some thought that since Bell did not provide "free" access, it was the library's job. Others found themselves thinking of the Sailor network as competing unfairly against Bell Atlantic, and other providers.

Sailor as a Community Net

One participant noted that in the Baltimore area, and in other areas throughout the state, there were few community nets as had evolved in other states. He attributed this to the fact that the Sailor network had become, de facto, the community net for the state by allowing [encouraging] local information resources and services to be developed on Sailor. He saw this phenomenon as one of the most important aspects of the Sailor network and stressed the importance of continuing to develop state and local government and unique community information resources and services on Sailor.

Pratt vs. Other Libraries

There did seem to be some of "us versus them" in the discussion. Pratt has not always had the resources needed for basic library services and other systems are "rich by comparison to us." The reality is that users don't care if they access Sailor through Pratt or via an individual library. The librarians are the ones for whom this is an issue. Moreover, the Pratt folks are the ones who "really care about the poor and the have-nots having access to electronic information." Moreover, were it not for the "serious and research" collections available at Pratt, other systems could not reallocate monies to other services and activities.

Painting A Vision of the Sailor Network

When asked what the Sailor network should look like in a couple of years, a number of individuals suggested the following:

- A straight-forward governing board or council.
- Maintaining the free public access at some "safety" net level.
- Improve the breadth and depth of content on the Sailor network.
- Include better search engines throughout the system and for the various content.
- Cleaner and more understanding up-front menus.
- Contain more and better state and local government as well as community information.
- Sailor would be a baseline of services and support from which the libraries would build upon and otherwise integrate into their existing systems.

At issue was the concern of what should the Sailor network become? Some thought that very careful analysis of Sailor's purpose and objectives for the next few years was essential.

Some more specific strategies for the development of the Sailor network include the following:

- *Governor's Office Takeover*: Sailor becomes the state government's statewide network, managed directly by the Governor's office.
- *Provider Sell-off*: Sailor contracts with a provider to operate and manage the technical infrastructure so that DLDS and libraries can concentrate on content and services.

- *Declare Victory*: DLDS states that the Sailor system is done and in place and now provides statewide access as per its original objectives, another entity such as Pratt with library governing board now is responsible for it, DLDS bows out of Sailor responsibilities.

- *DLDS Development*: DLDS maintains overall responsibility for the design and development of Sailor with more communication and better participatory governance of the network.

These scenarios each have benefits and limitations and would require some analysis. But it is interesting to note that the major concern voiced by participants for the future development was that Sailor provide a level of FREE public access to electronic information for state citizens.

The focus group participants reiterated their belief in the benefit of the Sailor network to Baltimore and the citizens of Maryland. Indeed, participants expressed that none of the problematic issues regarding Sailor were insurmountable. Rather, the problems were more of an indication of the growing and direction setting that Sailor will have to do in the near term in order to continue to play a key role in Maryland's information infrastructure development. To some, the Sailor network is now paying the price of being the first (and only) game in town - a position that provides both benefits and problems.

Sailor Operations Center (SOC) Focus Group
January 31, 1996

The study team met with four individuals responsible for Sailor administration who are housed in the Enoch Pratt library. The Sailor administrators provided the study team with a number of graphics depicting the network and other descriptive information. This summary details the key issues and topics identified during the focus group.

Staffing

Formal staffing support for Sailor administration versus informal staffing support for Sailor are two different things. Currently, LSCA monies pay for the network and system administration staff. The Degree to which the SOC director is paid by LSCA or DLDS monies is unclear. There is no question that the SOC director spends considerable time and has considerable responsibility for Sailor operations. These four estimate that 65-70 hour work weeks are not uncommon.

Beginning July 1, 1996 there was to be state money available to support a Sailor Operations Director (as opposed to the Pratt/SOC duties the current director fulfills) as well as some additional staff positions. Clearly, the formal staffing support for Sailor administration is inadequate given their responsibilities and the demand on their time. Informally, there are 3-4 others in the systems office who assist in answering the phone and otherwise support Sailor on a part time or as-needed basis.

In-Kind Support by Pratt

Pratt contributes a range of support and resources for the Sailor project. SOC members suggested that they had detailed those in-kind resource supports and could make them available to the study team. For example, Pratt pays for travel costs, five phone lines, long distance phone calls, supplies, etc. for Sailor network administrators.

Sailor Network versus Pratt Budgeting

To some extent, the budgets between s the Sailor network and Pratt for systems may be intermingled. SOC staff, however, indicated that they maintained "pretty clean" budgets and clarified expenditures between the two.

Sailor Network Administrators as State Library Consultants

The responsibilities of the Sailor network administrators have gone beyond that of Sailor operations to some extent. They all commented that they regularly answer questions and regularly offer advice to libraries on basic system configurations, automation, software/hardware applications, etc. Thus, these individuals serve as surrogate state library consultants for DLDS as well as providing Sailor services.

In addition, the Sailor newtork administrators are called upon to answer questions and provide support for the K-12 community, local governments, and the public at large. The range and breadth of their responsibilities far outweighs their staff size and ability to respond to all the demands that are placed on them.

Responding to Unrealistic Expectations

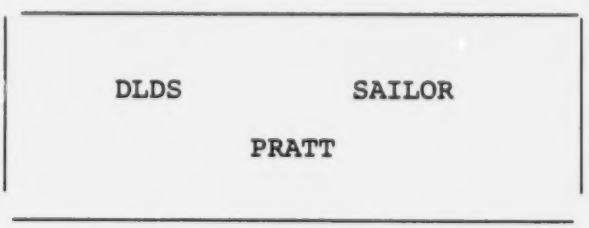
The statewide community expects these four individuals to resolve a range of issues and problems -- many of which are of a technical nature beyond the understanding of those seeking solutions. For example, they recounted an experience where a provider flat lied to them about making certain connections available when in fact they could not. They noted instances in which providers were unable to fix problems of a technical nature requiring Sailor technical support to fix the problem themselves, and so forth. To make matters worse, the same provider informed the public library administration in the problem area that the provider's services were indeed available and working -- quite to the contrary of fact. This created a situation in which Sailor operations staff was both defending itself against the misinformation of the provider and assisting the provider correct the technical difficulties of the network.

There is the sense that librarians and users simply did not understand the complexity and range of issues tied to building the statewide infrastructure to support the Sailor network. Thus, Sailor network administrators are constantly educating users and librarians about the infrastructure and how it was being built.

Sailor Network Governance

Participants agreed that there was some lack of clarity in specific responsibilities for who did what -- especially between Sailor, Pratt, and DLDS. There was agreement that there needed to be better coordination between MAPLA and the Network Cloud Committee, that there was the sense that directors were unable to provide the input they wanted regarding the technical development of the Sailor network. But then, there was the concern that not all the directors understood the technical issues well enough to address them.

When one of the consultants drew the following:



and asked where did one begin and the other end, the response from Sailor network administrators was: "Well, what exactly is Sailor? Where does *it* begin and end?" "You force me to define Sailor and I can't!"

In fact, the discussion proved to be a difficult one in how to "pull" Sailor out of this box. When thinking of the Sailor network as a technical infrastructure, services, content, and management, we were better able to deal with this issue. The the fact remains that detailing where DLDS, Sailor, and Pratt begin and end in terms of specific responsibilities for a range of services and support, it is quite unclear.

Sniffers

As per the research team's visit with the SOC earlier, they were in the process of testing and experimenting with the type of data they can obtain from the sniffers and how much of a load they can place on the system when using the sniffers. During the month of March, actual data on system use will be maintained and analyzed.

Help Desk

Some data is currently available to describe the range of help desk questions and activity. Stewart indicated that he could break out voice versus electronic help desk queries for the last three months. We discussed the possibility of doing unobtrusive testing on the help desk answers, which Stuart thought was a good idea. As a result of the advisory committee meeting later that day, however, the thought was that doing a content analysis of all questions and answers (at least for the electronic questions) would give a pretty good picture of the type of questions being asked and how the help desk responded to those questions.

Cost for Operating the Sailor Network Infrastructure

The study team asked how much would it cost for a provider to operate and maintain the Sailor network infrastructure rather than DLDS through Pratt. The answer is problematic, but the sense was that the annual expenses would be much greater than the $800,000 being spent during the current fiscal year. When pressed, some estimated $1.3 to $2 million perhaps. Such data, however, is a rough estimate. A detailed assessment of actual Sailor network costs was beyond the capabilities of the SOC and research consultants at the time of the study due to unknown public library in-kind contributions as well as precise Sailor financial data.

The Sailor Operations focus group concluded with the sense that there were more issues to address concerning the roles of Sailor Operations and the burden on those roles place on the Sailor Operations staff and Enoch Pratt. There will more than likely be follow-up interviews/meetings with Sailor Operations staff to further explore some of the key issues identified above.

Montgomery County Focus Group
February 1, 1996

The study team conducted a focus group with Montgomery County public library administrators, staff, and librarians; county government information systems and public information officials; citizen group representatives; Sailor Master Trainers; and, k-12 representatives. The focus group occurred between 10:00AM and 12:00PM, and uncovered several key issues regarding Sailor's past, present, and future. This summary details the identified issues. In addition to the focus group session, the study team had a lunch interview with the assistant director and one other member of the focus group who had had to leave the session early due to a previous engagement. Key topics and issues discussed are presented below. In all, there were 10 focus group participants.

Benefits from the Sailor Network

Participants were able to identify a number of benefits and accomplishments of the Sailor network that included:

- *Makes the libraries look very credible*. Sailor is a quality product in an emerging electronic networked environment. Sailor came forward and filled a void in state information services.

- *Made the state look to be out front in promoting and using the Information Superhighway*. Through Sailor, the state of Maryland comes across as being forward thinking and progressive as it pursues electronic information services.

- *Provides a gateway to an incredible number of information resources*. Sailor either hosts or points to a number of valuable information resources. This is a big plus for reference and other services.

- *Quick and effective way to obtain access to many information resources including local and state government information*. Through Sailor's recent reorganization of information sources, Sailor is now an effective tool for access to a great many local and state information resources.

- *Provides increased access to electronic information for all citizens of Maryland*. Sailor is a central and widely available means through which Marylanders can get access to electronic information resources.

- *Because the access to Sailor is "free" it levels the playing field of who has access and who does not*. Sailor is an equalizer of information, providing access to electronic information for all those who want it -- either from home through dial-ins or in libraries through public access terminals.

- *Sailor is a "hook" that once you get people in the library you can then get them to try or to be aware of other library services*. Sailor is a service that

allows public librarians to acquaint/reacquaint patrons with the services and/or resources of public libraries.

- *Provides an important means for immigrants to stay in touch with their country* [using range of home pages]. Participants commented on the vast information resources now available around the world through the Internet. Sailor provides access to such resources, enabling immigrants to keep in contact with their countries of origin.

- *Shows the importance of librarians and their role as intermediaries to provide access to these sources to the public.* Contrary to the belief of many, the Internet has increased rather than decreased the need for librarian-mediated access to information. Many users find that the Internet lacks organization and require assistance in navigating, accessing, and retrieving Internet-based information. This role is one that librarians see as growing, not shrinking.

- *Demonstrated the huge and extensive amount of useful information available over the net.* For many, the Sailor network provided first time access to Internet-based information. It therefore served as an introduction into a new and large world for many.

- *Provides access to all the library systems and unique information within those systems/counties.* This "expands the resources that we have access to and lets us know what's out there."

- *Showed the citizens a New model of what a public library could be in the electronic networked environment.* Sailor enabled public libraries to become showcases of the electronic information age -- an opportunity perhaps not possible without Sailor's statewide approach.

Participants pointed out that because of the different circumstances of different libraries in the state, benefits would vary considerably. For example, in Montgomery county there is an excellent information infrastructure being developed with impetus for the county to make services and information available via Web pages. This is not true in a number of other counties.

Problems with the Sailor Network

In addition to the various benefits outlined above, participants also noted a number of problems and concerns with the Sailor network:

- *Needs much more local and state government information resources and services.* Sailor now is essentially a shell for local and state information -- this shell needs population and expansion. Participants noted that library systems need to work with Sailor to develop such content.

- *Sailor raised unrealistic expectations from users as to what they could actually obtain via Sailor* [can't get full text of the most recent Time magazine]. This is both a problem of Sailor promotion as well as "hype" from popular media. There is this misperception with users that all information available via the Internet is free.

- *Must move to a graphical user interface.* Lynx-based text browsing of Sailor contents is neither what the public wants or technologically adequate. Participants saw no reason to prevent Sailor from becoming a graphics-based service, particularly since a graphical Sailor web site exists.

- *Lynx is NOT user friendly and providing training on how to use it is very difficult.* Rather than simplify access to Sailor and Internet resources through text-based browsing, participants noted that Lynx substantially increases the learning curve of Internet/Sailor navigation for users. This makes the task of training users more difficult.

- *Sailor should not be moving to selling email accounts or PPP accounts.* The notion of Sailor entering into the role of provider generated perhaps the most vocal response from respondents. Participants argued that provider-based services such as e-mail are NOT the responsibility of Sailor. Moreover, such services were never the intent of Sailor.

- *Sailor misrepresents the network by imaging Baltimore rather than sources and services that might be of more interest to suburban areas.* There was a strong sense that Sailor was Baltimore-centric, that is, focused on the view of Maryland from Baltimore rather than the rest of the state. Participants felt that there was a lot more to Maryland than Baltimore, and Sailor should reflect that.

- *Technical people set up Sailor without input on content from content specialists (e.g., librarians) and thus the menus and content need refinement.* There was the perception that Sailor content was initially developed and designed by Sailor network technicians rather than such content specialists as government documents librarians, business reference librarians, etc. As a result, Sailor resembles the technological world view rather than user/librarian perspectives.

- *The public sales pitch of Sailor providing free access has changed significantly to that of trying to make money and SELL services.* Through the advent of individual library systems' selling of Internet services, participants felt that some library systems viewed Sailor and the Internet as potential sources of revenue. This was not, according to participants, what Sailor should be and is not what Sailor began as. There was very strong sentiment that Sailor should not be selling services but that it should stick to its original purpose of providing statewide FREE public access and information resources.

Sailor Network Governance

The view of the group was that the "techies" had been in control of the Sailor network development and that it was time for a new form of governance, perhaps the Board approach that had been mentioned in other focus groups. The governance issues also related to poor communication between Sailor Operations and the libraries.

Participants also voiced the concern that it was the 24 systems that paid for the Sailor network by foregoing their LSCA for two years. Yet, that LSCA money had benefitted K-12, local governments, etc. -- essentially the entire state. In return, however, libraries received little specific benefit from the Sailor network while simultaneously bearing all the costs of creating the Sailor network through LSCA money. Furthermore, due to the current Sailor network governance structures, library directors have little direct input and/or control over how LSCA money was being spent.

Purpose of the Sailor Network

An interesting discussion evolved about whether there first needed to be a new governance BEFORE they could clarify a purpose and role for the Sailor network in the future, or if a group should get together and clarify the purpose as a means for THEN identifying an appropriate governance structure. Throughout the discussion it was not always clear who, exactly, the group would be to determine the purpose of the Sailor network, or who, exactly, the group would be and how it would be selected to govern the Sailor network. There was wide agreement, however, that the purpose of Sailor now, and what the purpose should be, in the future, was confused and needed attention, "we cannot plan at a local library level for Sailor development when we don't know Sailor's purpose."

When asked for specific examples of items that should be considered as part of the Sailor network's future purpose, agreement on the following items did occur:

- Provide free public access to electronic information
- Insure the widest access to Sailor for all Maryland citizens from all walks of life
- Serve the greatest public good
- Promote access to and services from local and state governments in terms of linking citizens to local and state government
- Make a core of key information resources available to everyone in the state.

The group felt strongly that the Sailor network was a "public good" and should be promoted as such.

County Information

There appear to be two different efforts in place to mount county information on the Web and provide local government services electronically to the public. One is being developed within county offices itself and the other is being developed by the library. The degree to which these two efforts are coordinated is unclear. Apparently, there are some concerns from the county about having adequate firewalls to protect the county from hackers. One librarian told the study team that they hoped to be able to work more closely with he county on this effort and thought that they were making progress.

This situation shows the different contexts in which the Sailor network operates. This county is more computer and network literate than some other the study team has visited. While some counties are "waiting" for the library to take a leadership role in making local information available, other counties are doing it themselves without library involvement.

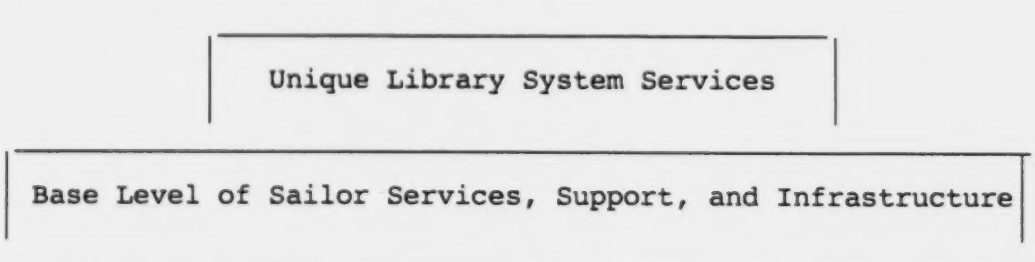
A key point, however, is the realization that an important growth area for the Sailor network could be promoting and managing local, county, and state information resources and services. As an area for the future development of the Sailor network, this certainly has great potential.

Sailor Network as Competitor

There was much sentiment that the Sailor network should not be in the for fee business, that it should be competing directly with private sector providers, and that its current move toward selling PPP accounts etc. was the wrong direction for it to take. Instead of positioning the Sailor network as a competing provider, it needs to be constructed as a public good, a public service, and one that is provided free to Maryland citizens.

Sailor Network as a Base of Services and Support

In trying to determine the role and purpose of the Sailor network for the future, the study team proposed that Sailor could be seen as a base level of services and resources from which the libraries could then build their own types of services and activities:



There was considerable support for this point of view. Some noted that it would be very important to determine how best to define the base or core level of services, support, and infrastructure to be provided. This idea would be especially important because libraries would know what to expect from the Sailor network and the point at which they would have to "go it alone" on developing other services.

An example of the type of core services that the Sailor network could provide included site licenses to specific data bases and other services so that the entire network had access to these sources. If the library already was paying for the database, the site license would free up those resources for the library to buy something else. If the library was too poor to buy access to the sources except through the Sailor network site license then they would be pleased to have access to something that otherwise they might not be able to purchase.

This model deserves additional thought and analysis as it offers one approach to help define what the Sailor network might be in the future. It is clear that many individuals are more interested, now, in the content and the services that should be provided via the Sailor network.

In Kind Support

Although Pratt can argue that they provide a broad level of in kind support and services to support the Sailor network, librarians here noted that Montgomery County ALSO provided a range of in kind support to make the Sailor network operate. They identified training, phone, instructional materials, travel, etc. as key in kind support items.

When the study team asked about how much in-kind support did the annual the Sailor network budget generate, no one really knew or could guess. It would be very interesting to develop some models and make some assumptions as to in-kind support among all the 24 libraries [and perhaps other organizations in the state] to be able to suggest that for the annual budget of $800,000 in generated $500,000 in in- kind support -- in much the same fashion that the National Science Foundation has argued that each Federal dollar generated $9-10 in additional network support.

Training

This is a tremendous effort. Training of staff and the public will need to be an ongoing, regular, never-ending effort. Although some new initiatives such as the Master Trainers are certainly helping, there is a need for more Training, more support for training, and developing more training modules that can be self-taught and are portable across the various library systems. Central support for training [perhaps as one of the core services discussed above] is essential.

Garrett County Focus Group
February 6, 1996

On February 6, 1996, a focus group was conducted with the Garrett County Library Director, public librarians, representatives from Frostburg State University and the public school system, and a representative from the State Media Services Branch of DLDS. The focus group session lasted 90 minutes and there were six participants.

Focus Group Issues by Topic Areas:

Overall View of the Sailor Network

Again, this group commented on three categories contained in the overall view of the Sailor Network. They were, inception, management, and technical.

Inception of the Sailor Network

While there were many technical problems to be addressed, the participants agreed that the Sailor network was definitely a "good thing" for Maryland. Participants agreed that the Sailor network will provide technological information literacy, which is especially important for children. The group emphasized the notion of free access for all Marylanders and the benefits of using Sailor as an exploration tool for individuals interested in the Internet.

In contrast to some other site visits, all participants felt that the Sailor network menus were easy to follow and several commented that they liked the engines. It seems the full media/marketing Internet blitz in Garrett County is different (less) than what has been occurring in other less rural areas. It is likely that this impacts on the perception of Sailor as a "neat" tool.

K-12 Electronic Network Use Issues

There was a great deal of discussion about children and access to the Internet. In fact, one participant stated that it was the nature of a rural community to place more of an emphasis on what their children are seeing and reading. Indeed, the K-12 media representative claimed a group of parents requested a book removed from the library because it contained the word "Hell". MSDE is working on a draft of an "Acceptable Use Policy" for the Internet and has agreed to forward a copy to the study team.

Participants paralleled the problems with Sailor to those that occurred with METNET. Participants maintained that the teachers were so dissatisfied they went to the University of Maryland for accounts. To date, many of these teachers have not gone back to METNET. There was concern that the same situation will occur with the Sailor network - Once it loses its audience, it will be almost impossible to regain it.

Technical Issues

There are five libraries in Garrett County, and only two branches (Oakland and Accident) have access to the Sailor network. Three issues arose related to this lack of connectivity and technical problems in general:

- *Reliability.* The unreliability of the Sailor network in Garrett County was the most pressing concern. The network came up on December 11, 1995 and was sporadically up until the whole system crashed on January 4, 1996. It was not repaired until January 22 and has not been consistently up since then. Due to these problems, library staff have not promoted Sailor in the community. Staff are very concerned about the image of the library and its inability to deliver what has been promised. Neither Oakland nor Accident currently provide patrons with access to Sailor. The library's intent is to first train the staff.

  One participant commented on the reliability as it relates to the school system. If the school is lucky, it has a phone line to dial into the library. Then, if they were very lucky, the students would actually get in to Sailor. Most of the time, however, they were unable to connect. This is very frustrating to the teachers, as well as the children.

- *Technical Support.* Two issues regarding technical support arose in this meeting: the help desk function and actual, in-library technical assistance. The participants criticized the help desk toll number, especially for patrons in this rural area. It is politically unwise to advertise Sailor as a free access network, and then charge for help. Additionally, library staff have been contacting the help desk to discuss her three branches without connectivity and has received little assistance.

  SOC network staff haves visited the Oakland branch several times. A Frostburg State/TCI Computer Systems computer technician provides consulting assistance to the library and has met with SOC staff. When attempting to get answers about the problems with connectivity, neither the library director nor the computer technician believed that they received an adequate response. They were still unsure about what was wrong with the connectivity. While participants were willing to acknowledge SOC staff's workload burden, they nevertheless feel slighted when attempting to garner some technical assistance from SOC.

- *Hardware.* The participants concluded that there is something wrong with their hardware. Participants felt there was something physically wrong with the Ascend box. Oakland was given a different box, and that did not work. SOC networking staff came in and reprogrammed the software. This did not worked either.

  Another hardware problem involves the modem. When the specifications were received, it clearly stated they would receive a 28,800. They received a

14,400, but it only connects at 9600. SOC networking staff repaired the modem and connected it at 14,400. It ran at this speed for only one day and was currently running at 9600.

Participants did not understand why this was so difficult. They have a LAN to Hagerstown that works, but not Sailor. The library director is also concerned about eventually putting a computer in the patron area. They do not have the phone lines to accommodate this, nor do they have they funding. When they gave it a trial run, phone lines were strewn across the library.

Finally, library administrators are concerned about the future. Most of the branches have one phone line. Administrators are questioning how this connectivity will work in the branches.

No persistent connections to Telnet - Unable to do an 8 bit Telnet session (only 7 bit) and this is time intensive.

Needed Enhancements to the Sailor Network

Participants identified the following as needed enhancements to the Sailor network:

- *Support.* As discussed in the technical issues section, Garrett County suffers from slow response to problems and an overall sense of feeling left out. The participants suggested a toll-free or local help desk number for patrons. Library administrators would like to see a local technical/support help desk, but recognizes she does not have the funding or the staff to maintain it.

  Related to this notion of support is communication. All participants agreed that there is a lack of communication between Garrett County and Pratt. This problem must be resolved in order for the Sailor network to benefit the community.

- *Clarification of the Role of Sailor.* All participants agreed that the Sailor network requires a better definition. At this point, no one really understands the purpose, role, goal, or objectives of the network. Additionally, while clarifying this role, the determination needs to be made about whether the library is in the business of providing e-mail accounts.

- *Content/Development.* Gail would like to see the school systems more involved in the actual development, evolution, and content of Sailor. This will in turn provide another opportunity for cooperation between the school and the library. The K-12 representative agreed and suggested Sailor provide full-text magazine articles. Apparently the library had this on their LAN (trial basis) and it was exceedingly popular.

Garrett County libraries and school systems already have a close working relationship. It has worked well there, and the participants suggest this type of union can only benefit the Sailor network. For instance, two participants trained together on the Sailor network and provide each other with support and assistance whenever necessary. Library administrators stressed that this is particularly important because of the isolation of this county.

Sailor Network Governance

Only some participants commented on Sailor network governance and neither could answer the question of who is in charge. One participant stated that the public library directors met five times last year, and they were never able to answer this question. Another participant agreed and added that she personally sits on three committees related to Sailor, attends them regularly, and still does not have an answer. Again, mention was made about the blurred line between where the Sailor network starts and Enoch Pratt Free Library ends. There is the perception that the two can not be separated.

When asked about moving the whole network to the governor's office, the library director expressed a great deal of concern about the ILL for Garrett County. One participant then suggested the government take over the technical aspects of the network and then allow the libraries to manage the content. Some participants agreed with this suggestion.

Other Initiatives

The Garrett Rural Information Cooperative (GRIC) operates out of Garrett Community College and has developed and implemented The Garrett Community Network (GCNet). GRIC consists of community leaders interested in information technology, and Emily Ferren sits on the Board of Directors. GCNet is an operational wide-area network which came on-line in September 1995. One participant believed the development of GCNet occurred simultaneously with the development and implementation of Sailor. She does not believe Sailor was an impetus for the idea of GCNet. However, while the group was looking into telecommunications in general, they discovered that the Sailor connectivity time-frame for Garrett County was so far into the future ("low-man on the totem pole"), that they may as well not have been included. One library administrator described the GRIC as the community provider. In fact, the provider is MountainNet located in Morgantown, WVa.

Interview with Director of Harford County Public School Information Technology Services November 30, 1995

As part of the Harford County site visit, the study team interviewed the director of Harford County Public School Information Technology Services. This is in a newly created position within the Harford County public school system that is responsible for developing and implementing a school system-wide information technology infrastructure. This infrastructure is intended "to ready the school system for the advanced education needs of the next century." In essence, the director is in the process of matching Harford County educational needs with appropriate technologies -- both for student and instructional use.

Harford County School and Selected Public Demographics

The Harford County school system encompasses:

- 49 schools
- 11 administrative offices
- 3,800 professional staff
- 2,800 support staff
- 37,820 students.

According to recent surveys conducted by the school system under the director's guidance, approximately 66% of households in the county have computers. Furthermore, the Harford County populace is well educated with a substantial percentage of holders of Ph.D. Degrees (a factor largely due to the nearby Aberdeen Proving Grounds, a Department of Defense research facility).

Current School Information Technology Infrastructure

The school system is currently undergoing a system-wide technology needs assessment. Initial findings indicate that school all library media centers have at least one computer with a 9600 baud modem attached to it. Moreover, due to community interest and demand, a majority of these computers are multimedia workstations.

Ultimately, the goal is to have multiple multimedia workstations in each public school for both student and teacher use. These workstations are to have high speed external communications capabilities, either through high speed modems or direct connections.

As indicated in the Focus Group, the Harford County public library also operates a community-based electronic bulletin system (HOLI). The director works with the library to develop HOLI content. While the director was uncertain as to the extent to which Harford teachers used HOLI, the router through which the schools accessed HOLI logged 11,656 calls during the month of November.

Issues, Concerns, and Barriers to Public School Use of the Sailor Network

While the director claimed not to have empirical evidence, he estimated that approximately 60% of educators do not use the Sailor network or the Internet. This was so for a variety of reasons:

- *There is no technical curriculum for teachers and schools that have access to Sailor*. The biggest barrier to Sailor use within the K-12 community was that there was no specific educational curriculum in place for teachers, support staff, and administrators to learn the "ins" and "outs" of the Internet and/or Sailor. Without such a curriculum in place, teachers would not necessarily take the time on their own to learn Sailor/the Internet and subsequently incorporate those learnings into the classroom and/or daily school operations.

- *There is no pre-packaged K-12 curriculum available via Sailor*. The director viewed this as Sailor's biggest weakness and, moreover, an indication of the State Department of Education's lack of interest in Sailor as a K-12 resource. Teachers look for developed curricula to use in their classes, a resource that Sailor does not currently provide. To promote greater interest in Sailor, the director stated that Sailor needs to specifically target the K-12 community with curriculum-based content.

  The director commented that, due to the lack of specific K-12 content on Sailor, HOLLI usurped Sailor within the community. HOLLI makes a tremendous effort to collect local information of relevance or perceived import to the community readily available to all. While still undergoing development and enhancements, HOLLI's matching of content to community needs has given it the upper hand as a community-based information resource.

- *Initially targeting only school library media specialists was an error*. In introducing Sailor to the K-12 community, The director felt that the public library community made an error in judgement by only marketing Sailor to School library media specialists. To get school-wide buy-in to Sailor, the public library (DLDS) needed to reach out to the faculty, support staff, and administrators as well -- not just school library media specialists. While the spreading of Sailor instruction to the rest of the K-12 community is occurring now, this should have been done from the beginning.

- *Lack of integration with other K-12 networks*. The K-12 community throughout the state has, through the University of Maryland System, a state-wide network known as METNET. METNET was developed by the State Department of Education, the University of Maryland System (UMS), and some federal grants to service, via electronic networks, the K-12 community. METNET and Sailor are distinct networks (NOTE: the METNET help desk person actually resides within the Sailor Operations Help Center and, when not busy contending with METNET problems, will

assist in answering Sailor-related problems). Indeed, through METNET and UMS, teachers can get Internet e-mail accounts.
While the director alluded to other issues (state politics) involved concerning the lack of integration between METNET and Sailor, the lack of integration essentially creates an "either/or" situation for teachers.

- *Lack of understanding by the K-12 community of what Sailor is*. A majority of teachers view Sailor as a gateway to the Internet -- not as an information service that has the potential to assist teachers in their classroom instruction. The director attributes this lack of understanding to two issues: (1) A poor marketing job by Sailor to let teachers (not media specialists) know what Sailor is/can be, and (2) A lack of effort on the part of teachers to learn and use Sailor.

- *Lack of public library technology infrastructure to support K-12 community*. The Harford County Public Library system is incapable of supporting the future connectivity needs of the K-12 community. At present, Harford P.L. has only 16 lines for Sailor -- and inadequate number of lines for incoming calls. **It is more than likely, therefore, that Harford County schools will seek their own sources of Internet connectivity, thus bypassing Sailor.**

- *Poor interface (text) to Sailor*. Another reason for the lack of Sailor use within the K-12 community is the text-based "nested menu" system of Sailor (Lynx). There were simply too many and poorly organized menus with which to contend on Sailor.

- *Standard use policies*. Not directly related to Sailor, but rather the Internet at large, is the issue of acceptable use policies and content access. The director has essentially put full Internet access on hold for Harford schools until the development of policies that govern the appropriate uses of school Internet connections. There is a genuine fear of students accessing inappropriate material via a totally open Internet connection.

Benefits of the Sailor Network

During the interview, the director expressed a variety of benefits that the Sailor network provided Harford County. These benefits include:

- *Sailor served as a community information infrastructure catalyst*. The director credits Sailor with serving as an extremely timely and important technology catalyst within Harford County, "Sailor served as the energy source for the whole tech-thing." Without Sailor, the county government, public schools, public library, and community interest groups would not have come together and begin thinking about/planning a county information infrastructure in a "holistic fashion." Sailor served as the driving force behind the development of such an infrastructure as well as promoting the coordination of this infrastructure among several independently operated stakeholder groups.

- *Sailor educated the local government community in technology issues.* Sailor served to encourage local government entities to become educated in a variety of information technology issues -- both hardware and content. To understand Sailor and the potential of electronic networks, Harford County citizens and government decision-makers had to gain an understanding of both technology and what it meant to provide information services.

- *Access to state-wide, national, and international information.* The director felt that one of Sailor's strengths was its provision of a large amount of quality information in general (keeping in mind the issue of K-12-specific material mentioned in the previous section).

Future Directions for Sailor/Education

During the interview, The director expressed a few critical directions in which Sailor must go to ensure K-12 interest and participation as well as key issues facing Maryland in terms of embracing electronic networks as part of the K-12 environment:

- *MSDE needs to directly support Sailor.* The director stated quite clearly that MSDE washed its hands of Sailor (even though DLDS resides within MSDE) until Sailor became successful. MSDE provided no support -- financial or moral -- to the Sailor project. "MSDE cannot afford to ignore Sailor - it is our only network," said The director. MSDE, therefore, needs to take an active role in the development of Sailor and take advantage of Sailor's presence throughout the state by providing curricula and other K-12-related material via Sailor.

- *Electronic networking needs to be part of the K-12 certification process.* The director will be teaching several Internet- and technology-related courses this summer for teachers. This instruction, however, is voluntary. The director feels that such courses need to be incorporated into teaching degree requirements at the university level so that teachers come to school able technology- and Internet-literate. Periodic updates also need to be mandated to keep teachers current with technology.

- *Schools need to upgrade their infrastructure to provide adequate workstations and connectivity.* Schools lack enough workstations for students, teachers, and support staff. In addition, schools do not possess "fast enough" connections to outside services. "Speed is everything in the school environment, and 9600 baud is simply inadequate."

- *Sailor needs to specifically address the needs of the K-12 community.* Sailor will never gain prominence in K-12 without specific K-12 content -- namely curriculum -- for teachers and classes. Furthermore, Sailor needs to provide more outreach to the K-12 environment so that teachers, administrators, and students know the value of Sailor. Sailor also,

however, needs to provide specific help to the K-12 community so as to bring that community on board.

- *Sailor needs to enhance its network infrastructure to support the large K-12 community.* If Sailor does nothing to enhance its network, Harford County will surpass it. This includes more connections, faster connections, and the ability to gain graphical access to Sailor resources.

Based on this interview, Sailor is proving inadequate K-12 content, support, instruction, and connectivity. Sailor's major contribution, however, was in its bringing together of previously disparate communities -- local government officials, K-12, and public libraries -- to begin the development of a county-wide information infrastructure. According to the director, this alone was worth the investment in Sailor.

OVERVIEW

The topics and issues identified by the study team have a number of common themes including: management and governance of Sailor, funding and costing data, training, reliability of the technical infrastructure, appropriateness of Sailor network content, need for a GUI, importance of working with local and county officials to enhance access to local government information, and improving the marketing/publicity of the Sailor network. In addition, there was wide agreement on the range of benefits and usefulness of the Sailor network system. A number of participants stated (in one way or another) that "it is very impressive that such a system has been built in a relatively short period of time."

Clarification of Sailor goals and objectives, better and clearer governance of the network, and more direct involvement of Sailor network management by the libraries are all key issues that will affect the development of the next phase of Sailor. To some extent, participants in the various data collection activities wanted more clarification and direction regarding the development of the network. There was a sense that NOW is the time for this clarification to occur, to set in place a plan for the next phase of Sailor network development, and to marshall the resources to do so.

Appendix A - Interview/Focus Group Key Issues Protocol

Public Library Protocol

I. USES OF SAILOR

a. As a primary source of data

b. To answer reference questions

c. Types of UNIQUE/READILY AVAILABLE information -- state/local/federal government information, etc.

II. BARRIERS/MOTIVATION FOR USE OF SAILOR

a. Technology -- adequacy/familiarity

b. Connectivity -- readily available connections

c. Training -- on use of WWW, Gopher

d. Comfort level with Internet/electronic networks

e. Authenticity/reliability of Internet-based sources

f. Ready access to electronic information

g. Print/Documents on demand capabilities

III. IMPACT OF SAILOR ACCESS ON

a. Job in general

b. Ability to answer reference questions/gain access to most recent information on a topic

c. Public's/governing body's perception of the library as a resource center

IV. INTEGRATION OF SAILOR RESOURCES INTO CURRENT OPERATIONS

a. Is Sailor an integral resource in area of responsibility?

b. Sailor as a legitimate tool

V. OVERALL ASSESSMENT OF SAILOR

a. Views of Sailor as a state-wide and national information resource

K-12 Protocol

I. CURRENT PUBLIC K-12 INTERNET ACCESS

a. Configuration (how connect, through what provider, type of connection, etc.)

b. Current status of Internet access -- which schools; how many;

c. Future connectivity plans

II. INTEGRATION/USE OF SAILOR INTO

a. Overall curriculum

b. Specific courses

- where is Sailor being used?
- why is Sailor being used?
- why is Sailor NOT being used?

III. BARRIERS/MOTIVATION FOR USE OF SAILOR

a. Technology -- adequacy/familiarity

b. Connectivity -- readily available connections

c. Training -- on use of WWW, Gopher

d. Comfort level with Internet/electronic networks

e. Authenticity/reliability of Internet-based sources

f. Ready access to electronic information

g. Resource for students/teachers for coursework

IV. OVERALL ASSESSMENT OF SAILOR

a. Views of Sailor as a state-wide and national information resource

b. View of Sailor as a legitimate resource for curriculum development

Appendix B - Sailor Evaluation Focus Group/Interview Participant Questionnaire

Thank you for participating in the data collection process of our study. Please take the time to complete this supplemental questionnaire and return it to the address printed on the bottom.

1. Name: _____
2. Institution: _____
3. Phone number with area code: _____
4. Fax number with area code: _____
5. Internet e-mail address: _____
6. Current position: _____
7. Years in your current position: _____ years
8. Briefly describe your job responsibilities:

9. Overall, how would you rate your Internet navigation skills?

_____ Poor _____ Below Average _____ Average _____ Above Average _____ Excellent

10. Please list the two most significant strengths of the Sailor™ network:

(1) _____

(2) _____

11. Please identify two areas of the Sailor™ network that require improvement:

(1) _____

(2) _____

Thank you for taking the time to complete the questionnaire. Please return the questionnaire to:

John Bertot
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University of Maryland Baltimore County
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MARYLAND ASSOCIATION OF PUBLIC LIBRARY ADMINISTRATORS SURVEY

INTRODUCTION

On April 25, 1996, the investigators distributed a short questionnaire to participants at the Maryland Association for Public Library Administrators (MAPLA) meeting held at Laurel Public Library, a branch within the Prince George's County Library System (see Appendix A). The investigators provided participants with a brief introduction to the project and explanation of the questionnaire. Participants had 25 minutes to complete the questionnaire.

The purpose of the questionnaire was to solicit suggestions and comments from MAPLA members regarding benefits resulting from the Sailor network, visions for future Sailor network development, and key issues yet to be resolved regarding Sailor network activities and operations. More specifically, the questionnaire had the following objectives:

- To determine the degree to similarity or difference in views between the responses from MAPLA to those from the focus group sessions.
- To identify basic components that could be considered as part of a vision statement for the future development of the Sailor network.
- To identify key issues that must be addressed in the development of a strategic plan for the Sailor network.

A total of 21 library directors and assistant directors attended the meeting and all 21 completed the questionnaires.

The investigators analyzed the responses for each question by grouping similar topics under one statement and revising that statement as needed to encompass the sense of the responses until all responses were analyzed. Thus, some judgement had to be employed on the part of the investigators in determining which topics could be grouped under one of the existing summary statements or if a new statement had to be created.

Not all respondents provided answers to each of the questions; some offered more than three benefits or issues; and some provided responses to specific questions that fit better as answers to other questions, e.g., oftentimes respondents included issues as part of their response to question B, describing a vision for the Sailor network. The data provided for question C, part B, resolution of the issues, were not analyzed because:

- Many respondents did not complete this portion of the questionnaire.
- A number of the responses were more of a comment on the issue than a specific strategy to resolve the issue.
- A number of the responses were, in effect, "obtain more funding."

Benefits Resulting from the Sailor Network (Question A)

Respondents identified many benefits that have resulted from the development of the Sailor network. Respondents listed two benefits as most important with at least ten mentions each:

- Promotes positive public visibility for libraries as leaders in providing access to electronic information.
- Made a new range of information resources available to both librarians and the public.

Ranked next in importance with seven mentions was:

- Provides Maryland citizens with free, universal access to electronic information and encourages a level playing field of equal access to electronic information regardless of geographic location within the state.

The following benefits were mentioned three-five times each by respondents:

- Pushed library systems and staff into better and more innovative uses of the internet and related technologies.
- Facilitates resource sharing and access to unique state and community resources that otherwise might not be available to all libraries in the state.
- Offers a powerful model for how the library can be a key player and leader in the local community.
- Improves communication within the library and across libraries through the use of email.

The following benefits were mentioned one-two times each by respondents:

- Provides a vision that attracts new resources that otherwise might not go to the library community.
- Provides citizens with remote access to both their local library and library resources across the state.
- Organizes statewide information resources for better access and use.
- Provides a statewide communications infrastructure (backbone) from which a range of resources and services can be made available.

Overall, the responses could be grouped into 11 statements describing the benefits that had resulted from the Sailor network.

Future Vision for the Sailor Network (Question B)

In analyzing the responses to the question asking for the respondents' vision of what Sailor network should become over the next two-three years, a number of different components of a vision statement were identified. Respondents identified one aspect of a vision as most important with eight mentions:

- Is a means for encouraging a level playing field by providing Maryland residents with universal, free, and equal access to electronic information.

Ranked next in importance as candidates for part of a Sailor network vision statement were the following components with three-five mentions each:

- Has a reliable and state of the art information infrastructure.
- Promotes access to and use of state and local government information and services in new and innovative ways.
- Includes a simple yet effective interlibrary loan component where librarians and users can obtain resources from any library in the state.

Finally, there were a large number of possible Sailor network vision statement components that received one or two mentions each by respondents:

- Promotes decentralized administration with more local control of network management and funding.
- Is easy to use and accessible by everyone in the state.
- Offers a statewide catalog of all library and K-12 school/media holdings.
- Is a platform for Maryland libraries to provide opportunities for collaborating with government agencies, businesses, other libraries, and other organizations
- Is tool that promotes the economic development of both the state and the local community.
- Is affordable for libraries in terms of the information services it provides.
- Continues to be a national leader and innovator as a statewide network providing electronic information and services.
- Leverages statewide access to expensive or otherwise unique information resources so that all libraries do not have to purchase or license these resources individually.

- Links public libraries to other types of libraries in the state and encourages new and innovative types of collaboration.

Each of the above statements could be considered as candidates to be expanded and refined as part of a vision statement for the Sailor network.

Key Issues to be Resolved (Question C, Part A)

Respondents identified three key issues as most important to be resolved, each receiving at least seven mentions:

- Revising the governance of the network and clarifying management responsibilities among the various participants.
- Obtaining regular and adequate funding for the network.
- Ensuring technical reliability of the network

Next in importance were the following issues with three-five mentions each:

- Promoting access to and use of state and local government information and services in new and innovative ways.
- Offering an easy to use search and retrieval of statewide catalog holdings.
- Providing an easy to use Interlibrary loan component.
- Including more commercial databases and resources on Sailor.
- Providing direct and easy access to Internet Web sites from within Sailor.
- Improving the graphical interface and providing better SLIP/PPP support.
- Maintaining adequate staffing to support Sailor operations and activities.

The following issues received one-two mentions each by respondents:

- Ensuring affordable services and costs to the libraries.
- Enhancing help desk services and technical support and providing a 1-800 number for such support.
- Supporting a community net component within each of the systems/libraries that wish to provide community net services.
- Providing individual libraries with adequate computing and telecommunications equipment.

- Extending the content and resources available on the SAILOR network.
- Developing an ongoing and effective statewide publicity/marketing program for Sailor network.

These issues cover a very broad range of topics. Indeed, a number of the issues are linked such that resolving one will ultimately affect another. Thus, there are likely to be numerous trade-offs that will need to be identified and analyzed as these issues are addressed.

Overview

The benefits, possible visions, and key issues identified by the MAPLA respondents are very similar to those identified in the focus group sessions conducted by the investigators during November, 1995 - January, 1996. The MAPLA respondents offered more descriptive statements on possible vision statement components than did focus group participants. But interestingly, there is wide agreement between MAPLA respondents and focus group participants on benefits resulting from Sailor network and key issues yet to be resolved.

The lack of specific strategies to resolve the issues that is evident with the MAPLA respondents was also true in the discussions at the focus groups. The issues requiring attention are numerous and some have multiple dimensions. In short, a number of the issues that Sailor network development must address are complicated and involve a range of trade-offs, costs, and greater definition.

The range of benefits that have resulted from the Sailor network development process is impressive -- and, they are widely agreed upon as benefits by those who have participated in the study to date. The benefits, candidate components for the vision statement, and issues yet to be resolved provide important input for developing a strategic plan for future Sailor network development.

Appendix A - MAPLA Member Survey

CONSIDERATIONS FOR DESIGNING THE NEXT PHASE OF SAILOR

Please take a few minutes to provide answers to the following questions. As members of MAPLA, your suggestions and ideas are extremely important in considering the current status of and future directions for SAILOR. If you need additional space to answer these questions, please use the back of this page. THANKS!

A. What are the three most important benefits of Sailor for YOUR library system?

1.

2.

3.

B. Briefly describe your vision for what SAILOR should become over the next 2-3 years.

C. What are the three most important issues that must be resolved for SAILOR to move successfully toward the vision you outlined above? For each of these issues, what is your view on how best to resolve them?

Issue	Resolution
1.	
2.	
3.	

MARYLAND LIBRARY ASSOCIATION ANNUAL MEETING PRELIMINARY REPORT

Sailor Assessment Interim Report: Selected Findings and Future Sailor Development

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May 8, 1996

Prepared for:

Division of Library and Data Services
Maryland State Department of Education

Presented to:

Maryland Library Association
Statewide Network Assessment: Preliminary Sailor Network Results
Session
Hagerstown, Maryland

INTRODUCTION

The Division of Library and Data Services (DLDS) contracted with the study team of John Carlo Bertot, Charles R. McClure, and Suzanne Eastham in the Fall of 1995 to assess the Sailor network. The purpose of the assessment was to:

- Evaluate the value of Sailor to such target communities as the public library, K-12, business, minority, and state and local government communities;
- Recommend refinements and modifications to the Sailor network to meet the needs of the target communities;
- Measure the nature and extent of target community use of Sailor, with emphasis on the incorporation of Sailor-based resources into community activities; and,
- Create measurement devices that DLDS can use in the future to maintain ongoing or periodic assessment of Sailor.

The assessment, therefore, focused on the present use and future directions of Sailor. The final report will be submitted to DLDS in the Summer, 1996.

BRIEF STUDY METHODOLOGY

The assessment team engaged/continue to engage in a number of data collection activities to derive the findings presented in this preliminary report. These activities include:

- Case studies of the five[2] Maryland library systems that included focus groups and interviews with site
  - Public library administrators and librarians,
  - Local government officials,
  - Higher education faculty and administrators,
  - K-12 teachers and administrators,
  - Local business leaders, and
  - Internet Service Providers (ISPs);
- Mail and quick response surveys with case site
  - School library media specialists,

[2]The initial Sailor assessment plan included a four sight demographically- and regionally-based case study approach that included Baltimore City, Harford County, Montgomery County, and Wicomico County. The assessment team added Garrett County to the original case site selection to gain a Western Maryland perspective on Sailor.

  - Sailor Master Trainers, and
  - The Maryland Association of Public Library Administrators (MAPLA);

- Focus groups and interviews with key Sailor entities, including

  - DLDS,
  - Sailor Operations,
  - Network Navigators,
  - Network Coordination Council, and
  - MAPLA;

- Sailor network traffic data collection for the month of March, 1996, including

  - Overall Sailor usage,
  - Help desk transactions, and
  - Case site Ascend router traffic;

- Sailor Web page assessment in comparison to five other statewide state library-run network Web pages; and,

- Content analysis of case site, DLDS, and Sailor Operations Sailor-related planning, training, and manual documentation.

Together, these data collection activities provided the assessment team with the ability to identify both general and specific Sailor network operation, management, and technical issues. The assessment team continues to collect data and, as such, data collected from continued assessment activities can and may alter the findings presented in this report.

This preliminary report is organized into three parts. The first part presents selected key findings from assessment team data collection activities to date. The second part develops a vision and future direction for Sailor. The third part presents future models of Sailor network development to attain the Sailor vision outlined in the second section.

SELECTED KEY FINDINGS

A key challenge facing the study team was defining just what *exactly* Sailor is. Rather than being a single entity, Sailor is the sum total of many parts. For this study, however, we define Sailor to include the:

- Physical Infrastructure that consists of the network backbone, routers, servers -- in essence the hardware and software that are minimally required to provide electronic network services.

- Network Services that consist of information-based (e.g., on-line license applications, electronic tax filing) and database services (e.g., on-line encyclopedias, inter-library loan requests) provided via the network.

- Content Services that consist of unique information resources (e.g., historical state documents and images, state government legislation, local government information) available over the network.

- Governance Structures that develop and oversee the policies and procedures that direct the network's development over time and on a day-to-day basis. Further complicating the issue of governance is that governance structures can exist in the service and infrastructure components identified above.

Sailor is, therefore, a multi-dimensional and complex entity.

The remainder of this section presents selected study findings that pertain to each of the Sailor network dimensions identified above.

Governance Issues

A recurring issue throughout the data collection activities was that of Sailor governance. As discussed, governance is the multi-dimensional governing mechanism for Sailor network operations, content development, technical support, and funding. Study participants felt a genuine lack of network management control. Some commented that the lack of a formal governing body for Sailor resulted in no policy-making board. Issues such as censorship and intellectual property were cited as key concerns facing public libraries in the networked environment. Participants believe that there is no clear means through which to establish Sailor-wide policies regarding such issues.

New Governing Board

In some cases, library directors and other library governing bodies, feel that they lack appreciable control of the development of Sailor. That is, the network evolves and "things happen" without their knowledge or understanding. Factors contributing to this sentiment include communication gaps between Sailor developers and external entities, the constantly evolving information technology and telecommunications components of Sailor, and no single accountable Sailor governing body. Participants suggested the need for establishing a formal governing board. Such a board would have representatives from various stakeholder groups and perhaps recognize some geographic representation as well. It is important to clarify the governance, improve communication, and clarify the means by which Sailor development and decisions can be affected.

Purpose of Sailor

In order to govern Sailor, participants expressed the need for Sailor to have a clear statement of purpose. Throughout the data collection activities, it was not

always clear what, exactly, the purpose of Sailor was, or who, exactly, should be selected to govern Sailor. The lack of Sailor mission had an impact on individual library system. As one library director stated, "we cannot plan at a local library level for Sailor Development when we don't know Sailor's purpose." Some felt strongly that Sailor was a "public good" and should be promoted as such.

Funding Sailor

Participants voiced the concern that it was the 24 systems that paid for Sailor by foregoing their LSCA for two years. Yet, that LSCA money had benefitted K-12, local governments, etc. -- essentially the entire state. In return, however, libraries received little specific benefit from Sailor while simultaneously bearing all the costs of creating Sailor through LSCA money.

Participants also raised the issue of continued and future funding for Sailor. Some saw the specter of possible library system-Sailor conflict given the current management structure of Sailor. Library administrators are beginning to express serious concern in continuing to fund Sailor "with our money" while not having any real -- or very little-- control over the management, content, and services components of Sailor. Questions broadly on the topic of "where will we get the resources for future Sailor development AND support for local library operations related to Sailor?" were recurring.

Role of Enoch Pratt Free Library (EPFL)

A related issue to funding Sailor is the role of the EPFL in Sailor operations. EPFL contributes a range of support and resources for the Sailor project. A number of people commented on the ambiguity of who is actually paying for what. For some, there is the perception that Pratt is getting "a good deal" and for others, there is the belief that not all the money that goes to Pratt actually supports the network.

Cost Effectiveness of Sailor

The study team asked how much would it cost for a provider to operate and maintain the Sailor infrastructure rather than DLDS through EPFL. The answer is problematic, but the sense was that the annual expenses would be much greater than the $800,000 being spent during the current fiscal year. When pressed, some estimated $1.3 to $2 million perhaps. An issue is the degree to which Sailor is cost effective compared to other providers operating the network.

Physical Infrastructure Issues

At present, there are three flavors of Sailor, two of which are text-based (gopher and WWW via Lynx), and one that is graphical through the WWW. The Sailor backbone consists of 27 nodes. Five main issues arose concerning technical aspects of Sailor:

- *Consistency*. Due to the differences in Sailor servers (gopher v. WWW; text v. graphical), different information is sometimes available to users.

- *Reliability*. Participants expressed concern over the network's reliability in terms of (1) Overall Sailor network performance (2) Modem port availability, and (3) Content.

- *Ease of use*. Participants were on the whole concerned with Sailor's user friendliness.

- *Openness*. Sailor does not provide open access to the Internet. There is no "go to capability" as one librarian put it. Users are, therefore, limited to accessing Internet-based resources that are linked at the Sailor server level.

- *Technical support*. Many users, particularly those responsible for maintaining community-based Sailor connections and training both organization staff and the public, lamented the "inadequate technical support" provided by Sailor operations.

Changes that the Sailor network and Sailor Operations recently underwent in March, 1996 address some of the above issues. These changes include:

- *Additional network support staff*. Sailor Operations hired a new network technician, and seeks to expand its Help Desk staff. In the month of March, the Help Desk logged 1,500 Sailor-related calls, of which nearly 500 were received via email.

- *Reconfiguration of technical components to the backbone*. Since these modifications, the Sailor network has operated nearly flawlessly, with a 99.8% up-time.

- *Additional server hardware*. Sailor network use continues to grow. Sailor traffic is up 18% from June, 1995. To keep up with demand, Sailor Operations continues to add server hardware.

Additional network changes in the future include the removal of the Sailor gopher server in June, 1996.

Responding to Unrealistic Expectations

There is the sense that librarians and users simply did not understand the complexity and range of issues tied to building the statewide infrastructure to support Sailor. There is a relatively small administrative staff in place to respond to a range of technical and support concerns. Thus, Sailor administrators are constantly educating users and librarians about the infrastructure and how it is being built.

Sailor as Unfair Competition

To some degree, Sailor is a competitor to Bell Atlantic (or other providers) as a provider. Further, some participants considered Sailor as "unfair competition" since Sailor does not have to deal with a telecommunications regulatory environment with which Bell has to deal. Sailor as a "provider" was a new thought to some at the various focus groups. In response, some thought that since Bell did not provide "free" access, it was the library's job. Others found themselves thinking of Sailor as competing unfairly against Bell Atlantic and other providers.

Sailor Network Content and Services Issues

Sailor as Maryland's Community Network

Participants noted that in areas throughout the state, there were few community networks as had evolved in other states. Participants attributed this to the fact that Sailor had become, de facto, the community network for the state by allowing [encouraging] local information resources and services to be developed on Sailor. Participants saw this phenomenon as one of the most important aspects of Sailor and stressed the importance of continuing to develop state and local government and unique community information resources and services on Sailor.

Centralized Versus Decentralized Content/Services

An issue identified in the data collection activities was what Sailor content and services are best provided by a central entity [DLDS, Sailor Operations] versus what are best provided at the local library system/community level. The difficulty to resolving this issue is defining network content and services as statewide public goods as opposed to content and services of regional and local interest. For example, a local library special collection may serve the needs of the community, but through digitization, may in fact become a statewide resource.

Participants did, however, point to the following as network content and services that require a statewide approach through Sailor: Inter-library loan; state agency and archival documents; K-12 curriculum modules; access to on-line databases (e.g., Dialog, Carl Uncover) and encyclopedias (e.g., Groliers); and, state agency services (e.g., license applications). Local library system and community information content and services centered around specific library holdings, local government proceedings and services, local school district information (e.g., student homework), and various community group activities.

Participants also indicated that centralized information content and service candidates are those that DLDS could bring to bear economies of scale. Such services include centralized site licenses for on-line databases and encyclopedias.

Training and Support

The topic of training on Sailor content, services, and general connections was continually raised. Participants extolled the need for solid baseline training on Sailor with continual and frequent updates. There are three issues with training: (1) Updating the skills of library system personnel; (2) Providing training to community organizations (e.g, schools, local government) and library patrons; and, (3) Instituting continual improvement training sessions that factor in the continual changes to the Internet in general and Sailor in particular.

Benefits from the Sailor Network

Participants were able to identify a number of benefits and accomplishments of Sailor that included:

- Promotes positive public visibility for libraries as leaders in providing access to electronic information.
- Makes a new range of information resources available to both librarians and the public.
- Provides Maryland citizens with free, universal access to electronic information and encourages a level playing field of equal access to electronic information regardless of geographic location within the state.
- Pushes library systems and staff into better and more innovative uses of the Internet and related technologies.
- Facilitates resource sharing and access to unique state and community resources that otherwise might not be available to all libraries in the state.
- Offers a powerful model for how the library can be a key player and leader in the local community.
- Improves communication within the library and across libraries through the use of email.
- Provides a vision that attracts new resources that otherwise might not go to the library community.
- Provides citizens with remote access to both their local library and library resources across the state.
- Organizes statewide information resources for better access and use.
- Provides a statewide communications infrastructure (backbone) from which a range of resources and services can be made available.

- Shows the importance of librarians and their role as intermediaries to provide access to these sources to the public.

Participants pointed out that because of the different circumstances of different libraries in the state, benefits would vary considerably. For example, in Montgomery county a comprehensive information infrastructure is being developed with impetus for the county to make services and information available via Web pages. This is not true in a number of other counties.

OVERVIEW

The topics and issues identified by the study team have a number of common themes including: management and governance of Sailor, training, reliability of the technical infrastructure, appropriateness of Sailor content, need for a GUI, importance of working with local and county officials to enhance access to local government information, and improving the marketing/publicity of Sailor. In addition, there was wide agreement on the range of benefits and usefulness of the Sailor system. A number of participants stated (in one way or another) that "it is very impressive that such a system has been built in a relatively short period of time."

Clarification of Sailor goals and objectives, better and clearer governance of the network, and more direct involvement of Sailor management by the libraries are all key issues that will affect the development of the next phase of Sailor. To some extent, participants in the various data collection activities want more clarification and direction regarding the development of the network. There is a sense that NOW is the time for this clarification to occur, to set in place a plan for the next phase of Sailor development, and to marshall resources to do so.

DEVELOPING A VISION FOR SAILOR

A primary purpose of this assessment project is to provide input that guides the future development of Sailor. To do this, there is a need for an overall vision for the Sailor network. At a MAPLA meeting attended by the study team in April, 1996, MAPLA members identified components that could comprise a vision for Sailor. This section presents candidate vision components.

Respondents identified one aspect of a vision for Sailor as most important with eight mentions:

- Is a means for encouraging a level playing field by providing Maryland residents with universal, free, and equal access to electronic information.

Ranked next in importance as candidates for part of a Sailor vision statement were the following components with three-five mentions each:

- Has a reliable and state of the art information infrastructure.
- Promotes access to and use of state and local government information and services in new and innovative ways.
- Includes a simple yet effective interlibrary loan component where librarians and users can obtain resources from any library in the state.

Finally, there were a large number of possible Sailor vision statement components that received one or two mentions each by respondents:

- Promotes decentralized administration with more local control of network management and funding.
- Is easy to use and accessible by everyone in the state.
- Offers a statewide catalog of all library and K-12 school/media holdings.
- Is a platform for Maryland libraries to provide opportunities for collaborating with government agencies, businesses, other libraries, and other organizations.
- Is tool that promotes the economic development of both the state and the local community.
- Is affordable for libraries in terms of the information services it provides.
- Continues to be a national leader and innovator as a statewide network providing electronic information and services.
- Leverages statewide access to expensive or otherwise unique information resources so that all libraries do not have to purchase or license these resources individually.
- Links public libraries to other types of libraries in the state and encourages new and innovative types of collaboration.

Each of the above statements could be considered as candidates to be expanded and refined as part of a vision statement for the Sailor network.

As a vision for Sailor is developed, Sailor-affiliated groups need to find the best way to move Sailor in the direction of that vision. There are numerous ways though which to guide Sailor. The next section identifies and defines several models for the future development of Sailor.

FUTURE SAILOR DEVELOPMENT MODELS

A key component to the Sailor assessment project is to consider the future of Sailor's development over the next two-three year time frame. The data collection activities engaged in by the assessment team identified a variety of areas in which Sailor services (e.g., backbone and content) are considered outstanding, require enhancement, or do not exist. The assessment team incorporated this feedback into alternative operating models for the future of the Sailor network. As Table 1 shows, each of these models has tradeoffs and implications for the future development of Sailor in terms of such Sailor components as content/service control, infrastructure support and development, and governance. The models, therefore, require careful and comprehensive analysis.

The Local Partnership Model

Community-based networks continue to develop and evolve in this country. There are many approaches to community networks, of which the most well known is the Free-net (e.g., Big Sky, Cleveland). A more recent approach to local networking is that of various community constituencies, organizations, and stakeholders working together to create a broad-based community network.

In this model, Sailor evolves into a series of interconnected local community networks with collaboration among local governments, public interest groups, the library system, local schools, and other local groups. The public library serves as the network hub and assists the other participating groups to mount information services. The library also helps to organize the content of the network and ensure content accessibility.

Such a model shifts key Sailor content and network responsibilities away from DLDS and Sailor Operations to the community level. In this model, there is no notion of a Sailor backbone as exists today. Rather, the "backbone" evolves into a patchwork of local networks linked together through technical standards. Each individual county would be responsible for connecting and maintaining its portion of the network and content.

The Outsourcing Sailor Model

Prior to Sailor, there was no statewide backbone that approached the technical capabilities, innovativeness, vision, and leading edge technologies of the Sailor network in the state of Maryland. The creation of the Sailor backbone was educational to both the public library community and the regional bell companies. The Sailor backbone is now in place, with the public library community having blazed a trail of innovation throughout is creation.

With the Sailor backbone completed, one model of future Sailor development is to outsource the management of the backbone. In this model, DLDS outsources the Sailor telecommunications infrastructure and relinquishes its role as an Internet Service Provider (ISP). By outsourcing the network, DLDS and the

library systems can concentrate more on developing content and services statewide -- especially on getting unique state government and other Maryland information/services available on the network.

The Executive Branch Model

The state government is increasing its interest in and emphasis on high technology, education, and attracting new business to Maryland. The current Glendening Administration considers these three components critical to Maryland's future development and growth. Sailor uniquely links the three Administration's goals.

To facilitate the attainment of the Administration's goals, and meet the broader needs of the state, DLDS transfers Sailor to another state agency. Such a move or new home for Sailor could serve to increase Sailor's standing within state government and increase its visibility in non-library organizations. In this model, the Sailor operating budget comes from the state, and not DLDS.

The Declare Victory Model

As of Spring, 1996, all Maryland county library systems have Sailor connections. The Sailor network is operational, stable, and content continues to grow. The challenge to create, innovate, and implement Sailor is over, and Sailor is now moving into the maintenance and future development stage.

Sailor has now reached a salient stopping point. DLDS can, with just cause, declare victory in the development, operation, and provision of a range of networked services to the state. In this model, DLDS continues to operate the network infrastructure but it is now up to the library [and other communities] to decide what kind of content and services they wish to provide, to obtain additional services from ISPs if they wish, and to operate/maintain the equipment in their libraries.

The Hybrid Model

A key issue facing organizations today is that of what services and/or technologies to centralize or decentralize. To achieve economies of scale, create coordinating mechanisms, and facilitate the development of the Sailor network, DLDS centralized the Sailor project through itself, Sailor Operations, and key committees (e.g., MAPLA and the Network Coordinating Council). The future development of Sailor, however, may be best served by a combination of centralized and decentralized Sailor functions.

In this model, DLDS and Sailor Operations develop and centralize a core of Sailor backbone and network services. For example, DLDS becomes a vendor negotiator for all Maryland public library systems for key databases, on-line information services, and telecommunications services. Sailor Operations runs, maintains, and guides the future development of the Sailor backbone. Public

library systems can then individually choose what core services it wants from the DLDS "menu," but also have the option of seeking other non-DLDS and Sailor Operations services on their own.

The Status Quo Model

In this model, the Sailor network functions essentially as it does now. DLDS manages Sailor development through the distribution of state and federal funding, and Sailor Operations supports and runs the Sailor backbone.

For this model to succeed, DLDS and the library systems need to: (1) Engage in a planning process to develop a future vision for the network; (2) Redefine governance and management approaches; and, (3) Reach agreement on incremental improvements and changes that could be made with the network.

Each of the above models has tradeoffs in terms of Sailor management, funding, content and service development, and maintenance. Each model also will impact various user communities differently, with some providing for a more equalized statewide electronic information playing field than others. The model choice for future Sailor development is dependent on three key issues: (1) The development of a comprehensive Sailor vision; (2) The resolution of Sailor governance; and, (3) The determination of appropriate centralized and decentralized Sailor functions in terms of network infrastructure, content, and services.

Table 1 offers a beginning perspective on how to compare and contrast the above models. There is a need for further analysis to compare these and other possible models for the future development of Sailor.

CONCLUDING REMARKS

The first phase of Sailor, the backbone construction and initial content and service population, is complete. At issue is the future direction of the Sailor network: (1) What should the network be to the state of Maryland and the country in the next two to three years? and (2) What is the best way to get there? The answer to these questions are complex and require the resolution of such issues as Sailor governance, physical infrastructure, content services, network services, and a clear vision.

There is a sense that describing the next phase for the Sailor project is of critical importance. A number of study participants commented that many of the issues raised should not serve as barriers for developing the vision for the next phase of Sailor. Indeed, a number of participants are eager to begin planning for that next phase.

Table 1. Comparison of Possible Sailor Models by Evaluation Criteria.

	Sailor Model					
	Local Partnership Model	Outsourcing Model	Executive Branch Model	Declare Victory Model	Hybrid Model	Status Quo Model
Evaluation Criteria						
Governance Type/Model						
Content/Service Control						
Infrastructure Control						
Technical Support and Training						
Library Systems Cost						
Services/Content Quality Control						
Degree of Statewide Visibility for Libraries						
Public Accessibility to Electronic Resources						
Statewide Electronic Resource Sharing						

WEB SCRIPTING METHODOLOGY - COMPARING STATE LIBRARY WEB SITES

WEB SITE SCRIPT EVALUATION METHODOLOGY

A key component to measuring the effectiveness of World-Wide Web (Web)-based resources is an assessment of the Web site itself -- the ability of users to, for example, navigate the Web site and access the site's content. Such an evaluation enables the maintainers, policy makers, and stakeholders of the Web site to:

- Assess the site's usefulness and ability to serve its intended audience
- Perform an in-depth analysis of key Web site functions, e.g., help features, information provision, and feedback capabilities
- Evaluate the general layout of the site
- Compare the site's features and services to other similar sites.

These site-based measures extend beyond Web server efficiency measures (e.g., number of hits on the homepage) to begin to measure a Web site's impact on the user community. Such measures are necessary to determine the ability of a Web site to accomplish the site's established objectives and goals (from both the perspectives of the site maintainers as well as users), build upon the site's strengths, eliminate site weaknesses, and explore new areas of interest to site users. Thus, these measures enable Web site maintainers to continually monitor and modify their sites to more closely meet user expectations.

Prior to this study, however, there was no measurement tool available to perform such an Web site analysis. As such, the study team developed a Web evaluation script to systematically assess both general and specific components of an existing Web site.

Developing the Web Scripting Tool

Prior to developing the Web site scripting tool, the research team conducted an extensive literature review to identify electronic network resource assessment methodologies and evaluation criteria. This review of the literature yielded the following electronic resource evaluation criteria (Bertot and McClure, 1994; Central New York Library Resource Council, 1995; GNN, 1996; McClements and Becker, 1996; Olszak and Shires, 1992; Peters, 1996; Stoker and Cooke, 1995; Tilton, 1995):

(1) INFORMATION CONTENT CRITERIA (substantive aspects of the web site)

Orientation to web site (i.e., site purpose and objectives)

- A library and/or web site mission statement is provided.
- The purpose/mission of the web site should be appropriate to the targeted audience(s).
- The scope of web site is clearly stated.
- The services and information provided at the web site are clearly described.
- Instructions in the use of the web site are provided.

- The web site contains a liability statement warning the user of information provided through links is provided (e.g. access by children).
- Copyright statements are provided if necessary.
- A contact person is listed on the homepage.
- Last update information is provided on the homepage.

Authority (i.e., statement of responsibility)
- The overview indicates who is responsible for the web site (library consortia, state agency, etc.).
- Address of contact person appears on homepage and on pages with substantive content.
- There is a hotlink that allows the user to email the contact person from the web site.

Content (i.e., relevance of Web site information)
- The content of the homepage should match the purpose/mission statement.
- The content and hotlinks match the needs of the expected audience.
- Content coverage does not overlap.
- There are full-text and other useful resources (e.g., maps, photographs) available.
- The content has an original quality that inspires users to visit regularly for information.
- The content is written in a clear and consistent language style that matches the expected audience.
- Avoids jargon, humor, condescension, accusation, chit chat and or bias.
- Uses a positive and professional tone.
- The majority of the content is open to expected audience (no fees, passwords, restrictions).

Currency (i.e., Web pages with substantive content are updated regularly)
- Address of contact person and last update information appears on pages with substantive content.
- Pages have been updated in the last three months.
- The content provided by the web site creators is up-to-date.

Bibliographic Control (i.e., terminology used in descriptions and links matches the information described)
- Headings are clearly phrased, descriptive and understandable.
- Each screen is titled clearly.
- If the headings cannot be completely descriptive, coherent and concise descriptions follow.
- The information that is provided through the hotlink matches the headings and descriptions.
- Terminology and layout are consistent within the headings throughout the web site.

Services (i.e., availability of an interactive provision or exchange of information via the web site)
- Services are provided on the web site.
- Services meet the needs of the user.
- Services are fully operational.
- A majority of the services is open to expected audience (no fees, passwords, restrictions).

Accuracy (i.e., status of web site content is stated -- e.g., in progress -- and content is error-free

- Statement of document/web site status is provided e.g. if in progress, will note, "under construction".
- Typing, spelling, and grammar errors and other inconsistencies are absent.

(2) EASE OF USE CRITERIA (physical movement through the web site)

Quality of Hotlinks (i.e., all links and hotlinks -- links that connect to pages outside of the web site -- are fully operational)

- The hotlinks are operational (e.g., no dead ends).
- Temporary forwarding addresses do not qualify as good hotlinks.
- "What's new" section provided for new hotlinks (good for frequent users).
- Shortcut hotlinks are available (e.g., menu bars, buttons).
- Warning statements are provided, if hotlink will lead to large document or image.
- Indication of restricted access for a hotlink is provided.
- Documents in other web sites that are mentioned in the content are accessible through hotlinks.

Design (i.e., format -- use of graphics, colors, text -- is appropriate to subject matter and functionality of web site

- Format is appropriate to subject matter and functionality. A good design directs users toward information rather than away from it.
- The screens are uncluttered.
- The format is consistent throughout the web site.
- The homepage for the web site is short and simple.
- The web site is written in standard HTML language. The site is consistent when accessed via different browsers (text and graphic).
- Graphics and color lead the user through the information appropriately.
- Design is appropriate to the information provided on the web site.
- If used, the following are appropriate to the web site information:
- Large graphics (monster graphics).
  - Many little graphics.
  - Blinking text and/or graphics, and other attention getting devices.
- User has the option of turning off the automatic loading of graphics.

Navigability (i.e., easy for users to move around the web site -- help instructions and navigation options are clear)

- Essential instructions appear before links requiring user interaction (email).
- Navigation options are distinct and spelled out.
- Minimal user skills are required.
- Links are provided to return to web site homepage on all supporting pages.
- Links are provided to assist navigation e.g. "return to top", "return to previous page".

The above criteria formed the general framework for Web site script development.

The approach to evaluating and exploring web sites can vary widely among individuals. As such, the evaluation criteria were operationalized into a script

format (see Appendix A for a copy of the final script). A script is a series of questions that guide the evaluator through the evaluation. This is appropriate for web site evaluations, since an undirected examination of a web site would be very time consuming and the evaluation may not correspond with the desired evaluation criteria. Most of the script questions were based on a Likert scale. Terms (e.g., hotlinks, homepage, web site, etc.) were defined as much as possible, since "Web" jargon is fairly new.

For organizational and flow purposes, the script was divided into four sections:

- **Part I - Evaluator Background**. Poses questions regarding evaluator experience with the Web and using web sites.
- **Part II - Web site Orientation**. Directs evaluators to locate specific items (e.g., contact person, help assistance, web site purpose, etc.) on the web site homepage, or through links to these specific items from the homepage.
- **Part III - Further Exploration**. Evaluators choose a link to another page within the web site and are directed to find and evaluate specific items there.
- **Part IV - General Web site Evaluation**. Evaluators answer normative questions that summarize their impressions of the web site based on their experiences in completing Parts II and III.

Together, these sections enabled web site evaluators to assess both general and specific aspects of accessed web sites.

State Library Web site Selection

Eligible state library sites were selected from a January 1996 listing of thirty-five state libraries on the Wisconsin Department of Public Instruction web site (URL: http://www.state.wi.us/0/agencies/dpi/www/statelib.html). The criteria for selecting these sites were:

- The site was originally designed for web browsers and not a gopher site converted to a web page.
- The site was developed by the state library and not another entity (e.g., by a webmaster for a state's web site with little or no input from library personnel).
- The site had a front-end of two to three pages. Front-end means: the value-added organizing of state library web pages in a way that guides users to a wide range of pertinent/interesting electronic information. Thus, multiple pages are developed for the library web site, and it is not solely a homepage that hotlinks to pages developed by other entities.

Sites that did not meet these criteria were removed from the sample frame (the Wisconsin Department of Public Instruction web site).

A random sample technique was employed to produce a sample of five state library web sites for analysis. The Maryland Sailor site was included as a control for the other five state library sites. The final list of the six sites for analysis were Maryland, Nebraska, North Carolina, South Carolina, Utah, and Wisconsin.

Pre-Test and Final Revisions

The script was pre-tested with five graduate Master of Library Science (MLS) students in the School of Information Studies at Syracuse University. Students were assigned a state library web site and given one hour to fill out the evaluation. A brief training session was conducted to explain the format of the script and some key terms. All of the students accessed their assigned web sites via Netscape (version 2.0).

Revisions to questions and the format of the script were based on comments provided by the pre-testers during a post-evaluation, thirty minute discussion with the pre-testers. The primary concerns of the pre-testers were script duration and extensiveness -- none of the pre-testers were able to complete the evaluation within one hour. As such, the research team identified areas in which the script could be streamlined. Pre-testers also helped the research team to clarify and refine the terminology and definitions used throughout the script.

Finally, the research team created a key to ensure that the questions were measuring the established criteria (see Appendix B) . The research team removed the evaluation criteria no longer being addressed by the script.

Using the Web Evaluation Script

For web assessment purposes, the research team used a class of 25 MLS students at the University of Maryland College Park in February 1996. The research team visited the class on two different occasions. The fist session had as its purpose to:

- Introduce the class to the Sailor network evaluation research project
- Provide a general introduction to electronic network resources evaluation techniques
- Describe the role of the students in the evaluation project
- Go over the specific Web site evaluation procedures and answer any participant questions (see Appendix B for a copy of the evaluation instructions)

- Distribute the script and present a general overview of the script and the procedures for its completion.

Participants were also provided with research team contact information for questions and difficulties encountered using the script.

During the first session, the class was divided in two, with 13 students analyzing one of the five state library-based Web sites and Sailor through the text-based browser Lynx. The remaining 12 students analyzed one of the five state library-based Web sites and Sailor through a graphical browser (Netscape version 2.0). The researchers distributed a total of 50 questionnaires.

For the Sailor network evaluation project, the differentiation between graphical and text access to the Web sites was critical, as a majority of Maryland library systems had only text-based Web access and the need for graphical access to Sailor was a regular future desire of study participants.

The second session, which occurred after the MLS students completed the scripts, enabled the research team to:

- Identify issues of script use, including duration, ease of completion, and applicability to state library Web site evaluation tasks
- Probe specific areas of the script design and approach
- Identify areas in which the script required modification for future Web site evaluation projects
- Identify overall script usage techniques for future evaluations, such as the need for script tutorials and the use of various technologies.

A total of 50 questionnaires were completed by the participants.

Web Script Findings

Overall, Web evaluators considered the Navigability (70%), Quality of Content (68%), Quality of Hotlinks (58%), and Quantity of Information (58%) of all six investigated Web sites to be excellent (see Figure 1). As Figure 1 also shows, a majority of Web evaluators considered the Design and Services Provided by the Web sites to be excellent or average, with 80% and 68%, respectively. Interestingly, the Web evaluators were nearly evenly split between excellent, average, and poor ratings of the Quality of Help available on the Web sites, with 26%, 32%, and 32%, respectively.

The Sailor Web site, whether accessed through graphic or text browsers, ranked more highly than the other Web sites in all aspects of the evaluation criteria (see Figure 2). Of particular interest is that the Quality of the Content of the Sailor Web site was perceived to be greater (91%) by evaluators accessing the Web page graphically rather than through Lynx (79%). Conversely, evaluators

found that the Sailor Web site had a higher degree of Navigability (91%) when accessed through Lynx than graphically (83%). Follow-up interviews with the evaluators suggest that graphics are more appropriate for "surfing" and exploratory activities, whereas when the information desired is known (e.g., to answer a reference question from a known source), graphics are not necessary and even seen as a hinderance at times.

Overall, therefore, the Sailor Web site received a favorable -- excellent -- rating as compared to other state library Web sites. Such data indicates that the Sailor Web site, in terms of such aspects as Quality of Content, Quality of Information, Services Provided, Design, Quality of Hot Links, Quality of Help, and Navigability, surpasses that of other state library Web sites. Readers should remember, however, that the assessment of the Web sites presented here are valid as of March 1996. By their nature, Web sites are continually updated for content and layout and, as such, change over time.

Figure 1. Overall State Library and Sailor Web Site Ratings.

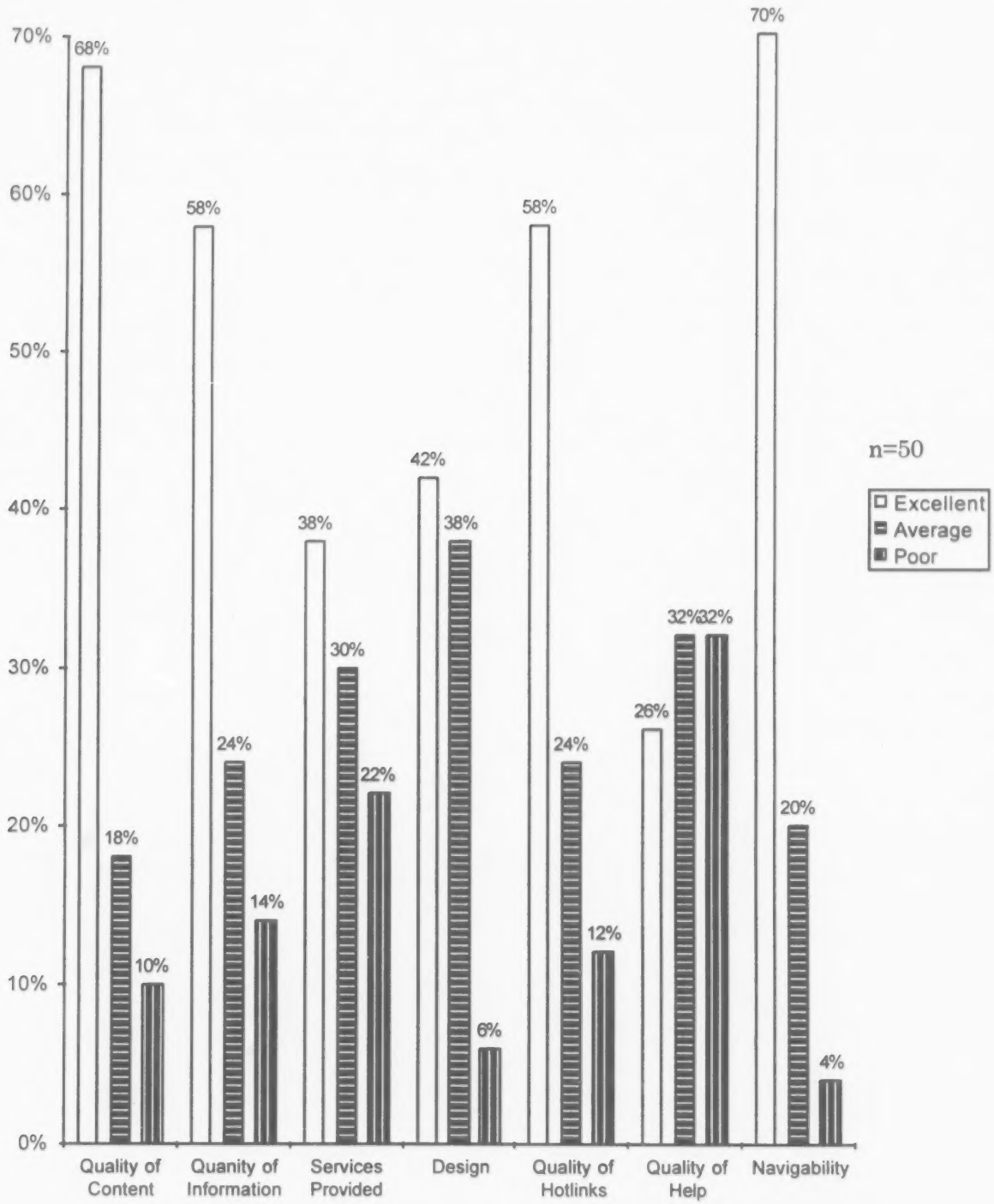
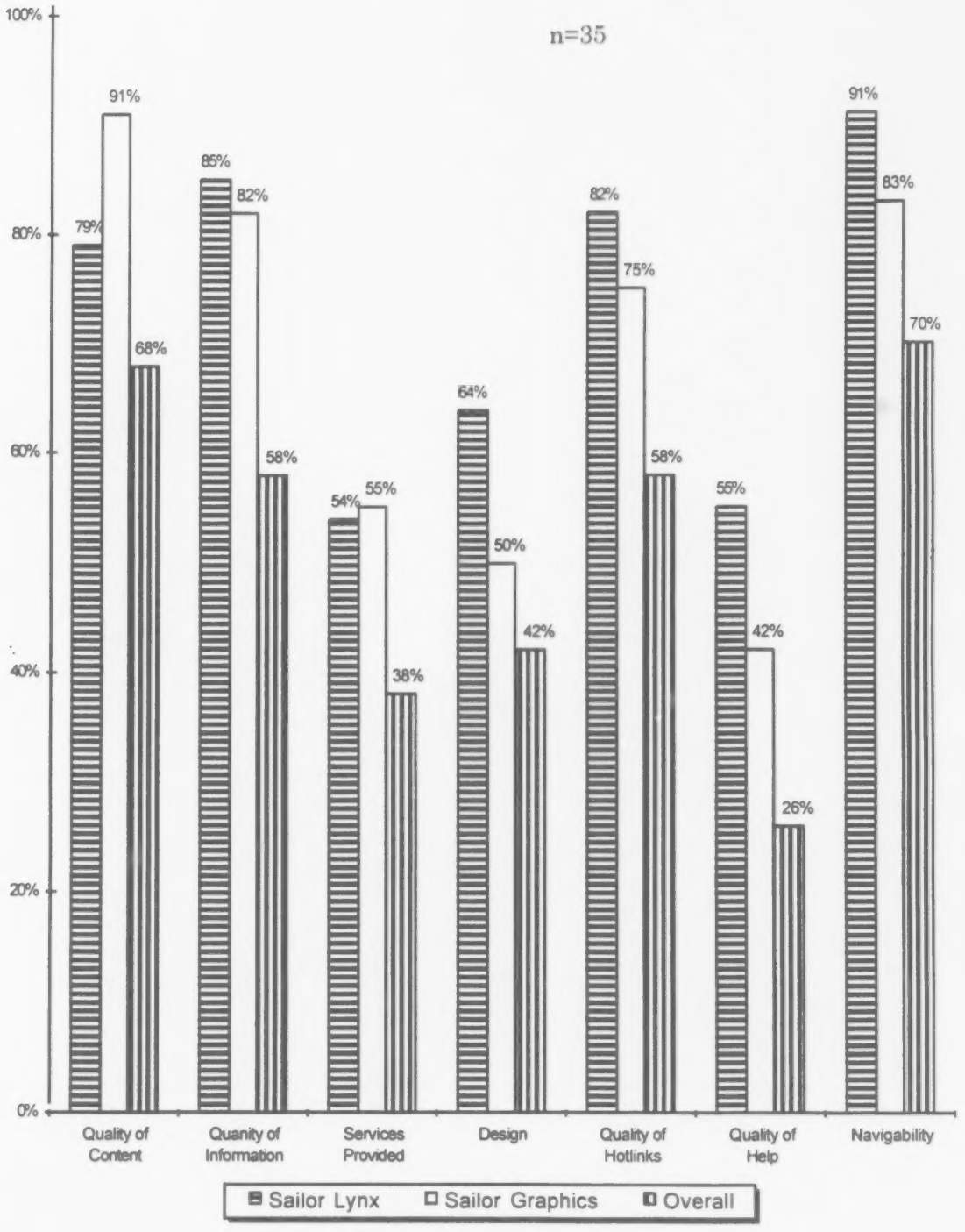


Figure 2. Sailor Network Web Site "Excellent" Rating.



Sources of Potential Error

Potential for error in data collection exists in script design, selection of evaluators, and technical aspects of web sites.

Script Design

The script is set up to expose the evaluator to the web site as fully as possible and in a manner that is time efficient. In Part III, evaluators choose which link they would explore further. There are two potential problems with this option:

1) Evaluators may choose to examine a link that immediately takes them to another entity's web site. Thus, an evaluator may end up basing part of their evaluation on another creator, rather than the state library.

2) A web site can be very uneven in its level of development. For example, one page within a web site may be very complete and well organized, while another one may still be in progress and contain little information. Thus, evaluators could form very different impressions of a web site based on their choice in Part III. This may affect the comparability of answers between individuals who evaluate the same web site, as well as between evaluations of different web sites.

3) The script is lengthy. Being the first time that this Web site evaluation technique was deployed, the research team sought to gather as much comparative data on the assessed Web sites. That desire, however, produced a time consuming script.

Problems #1 and #2 could be reduced or eliminated by directing evaluators to explore a specific link. For comparison among library web sites, a link that is similar among all of them could be chosen as the directed link. For example, most library web sites have a link to reference resources, although different web sites may give this link different titles.

Another possible option would be to have a freeform search where evaluators are told to use the web site to find an answer to a general question such as, "What is the population of X state?" or "Does the web site have genealogical resources?" This way an evaluator would get a more realistic feel for a web site's content and ease of use. The drawback to this approach is that it may be very time consuming, but a time limit could be imposed, i.e. search for a maximum of ten minutes.

The researchers consider the script topic areas and the questions related to those topic areas critical for analysis. In considering problem #3, the researchers recommend segmenting the script into topic areas for evaluator assessment. Such targetting will reduce the overall participant time required to complete the script while enabling the evaluators to acquire comparative Web data in all key areas.

An additional potential design error is that Likert scale questions are arranged with the highest to the lowest score:

Excellent Very bad
1 2 3 4 5

Intuitively, the scale should be reversed.

Selection of Evaluators

Potential errors in the selection of evaluators are:

1) Evaluators are examining web sites from an "outsider" perspective. Since they are not citizens of the state, they may not be in a position to judge the appropriateness and accuracy of the information presented in a state library web site.

2) Since the evaluations are done over an extended period of time and evaluators in this situation are classmates, they may discuss the web sites under evaluation which may influence their individual evaluations.

3) As with all voluntary subject (human) studies, no matter how well prepared the subjects are, some evaluators may not be thorough in completing the evaluation script. This would affect the reliability of the evaluations.

Technical Difficulties

Other factors that may exacerbate an evaluation are:

1) There may be difficulties in loading web sites (servers may be temporarily inoperable or have heavy traffic at particular times). This could negatively affect an evaluator's experience with a web site.

2) Another possible scenario is that due to the evolving nature of web sites, a web site could undergo a significant change between the times that each person evaluated it. Thus, individuals looking at the same library web site would, in a sense, be evaluating different web sites. A way to control for this would be for the evaluation administrator to be very familiar with the web sites and check them for changes before they are evaluated.

3) The structure of web sites are unpredictable and unique, but they are designed to channel users/evaluators to the information content. While we have tried to create a script that supersedes a web site's structure and allows for a standard evaluation, it may not be applicable to all web sites.

4) Web site evaluators using the script may not be technically proficient in the use of the Internet/Web. A basic Web training session is recommended to ensure that all participants have a common understading of the Internet in general and the Web in particular. Evaluators should not be trained on one of the Web sites to be evaluated, however, as that might influence evaluator findings.

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Appendix A - Evaluation of State Library Website Script

INSTRUCTIONS

This worksheet is designed to evaluate the quality of state library websites on a variety of criteria. Please keep the following in mind as you complete this worksheet:

Dos

- **Move freely around the website in order to answer these questions**
- **Note that Parts II and III apply to specific pages or sections and not the "website."**

Dont's

- **Mistakenly evaluate a webpage not created by the State Library (it is likely you will hotlink to other sites while answering these questions...).**
- **Become too wrapped up in 'surfing'**

Site Name:_____
URL:_____

PART I - Evaluator Background

How would you assess your familiarity with accessing and using websites? (Circle one answer)

Very Familiar 1 2 3 4 5 Not at all Familiar

Please estimate how much time you typically spend accessing websites during a typical day and week:

_____ Hours/Day _____ Hours/Week

PART II - Website Orientation

Enter the above URL in Netscape or Lynx in order to access the homepage for this website. Please return to this homepage before answering each of the following questions. For each question, circle one answer (unless otherwise indicated) that best represents your experience with locating and understanding a particular item.

A. Locate the website overview. Where was it located?

1 on the homepage
2 second page into the website (accessed by choosing a hotlink, not by scrolling)
3 three or more pages into the website
4 not located because hotlinks (hypertext) are not working } If 4 or 5 is selected, skip to question B.
5 does not exist }

A1. Does this overview indicate who is responsible for the website (library consortia, state agency, etc.)?

1 yes
2 no
3 unclear (please specify):_____

A2. How clearly does this overview explain the services and information provided at the website?

Very clear 1 2 3 4 5 Not clear

A3. Based on the overview, how appropriate are these services and information for a state library website and the expected audiences (i.e., state employees, citizens, etc.)? (Note that **services** means that a user interacts with the website to obtain information, rather than just viewing information. For example, making reservations at a National Park through a website is a service.)

Very appropriate 1 2 3 4 5 Not appropriate

B. Locate a liability or warning statement about information provided through hotlinks from this website. Did you find one?

1 yes
2 no
3 unclear (please specify):_____

B1. Please indicate the topic of the statement you found. **Check all that apply.**

__ Copyright
__ Unsupervised use by children
__ Other (please specify):_____

C. Locate "help" information, or user assistance options (help buttons, FAQs, etc.) about using this website. Where was it available?

1 on the homepage
2 second page into the website
3 three or more pages into the website
4 not located because hotlinks (hypertext) are not working } If 4 or 5 is selected, skip to question D.
5 does not exist }

C1. Does the help information explain how to navigate (e.g., move around) within the website?

Very clear 1 2 3 4 5 Not clear

C2. Does the help information explain or link to topics such as transferring files (e.g., downloading) or search strategies (e.g., methods for finding information)?

1 yes
2 no
3 unclear (please specify):_____

D. Locate a person or address (e.g., webmaster) that can be reached to provide feedback or to ask questions about the website. Did you find one?

1 yes
2 no
3 unclear (please specify):_____

What was the feedback address?_____

D1. Is there a hotlink that allows the user to email the contact person directly from the website?

1 yes
2 no
3 unclear (please specify):_____

D2. If yes, try to send a message. Did you get a message box?

1 yes
2 no
3 unclear (please specify): _____

E. Is there a 'last updated' date on the homepage?

1 yes
2 no
3 unclear (please specify):_____

E1. What does this date apply to? **Check all that apply.**

__ Homepage update
__ Website update
__ Other (please specify):_____

E2. When was the last update for the homepage?

1 within the last month
2 within the last three months
3 greater than three months ago

F. Does the layout of the homepage present a logical organization of the information and services available?

Well organized				Poorly Organized
1	2	3	4	5

F1. Note the presence of the following design elements. **Check all that apply.**

Design Element	**Yes**	**No**	**Unclear (please specify):**
Very large graphics.....			
Small graphics.....			
Multiple colors.....			
No color (black, white and/or grey only)....			
Patterned background.....			
Solid background.....			
Blinking text or graphics.....			
"What's New "signs.....			
"Under Construction" (or similar) signs.....			
Other (please specify):_____			

G. Are shortcut hotlinks available (e.g., menubar, graphical buttons, etc.)?

1 yes
2 no
3 unclear (please specify):_____

H. Are the headers worded clearly?

1 yes
2 no
3 unclear (please specify):_____

H1. Are brief descriptions given to further describe the headers?

1 yes
2 no
3 unclear (please specify):_____

PART III - Further Exploration

Return to the homepage and choose a link to explore in-depth. Be sure that the link you select resides on the website you are evaluating AND one that has full text resources (e.g., reports, forms). In the space below, please identify the link that you selected for analysis:

_____

The following questions only apply to this specific section of the website. For each question , circle one answer.

I. Do shortcut hotlinks continue to be available in this section?

1 yes
2 no
3 unclear (please specify):_____

J. Is there a person or address (e.g., webmaster) that can be reached to provide feedback or to ask questions about this section.

1 yes
2 no
3 unclear (please specify):_____

K. Is there a date on the first page of this section indicating when it was last updated.

1 yes
2 no
3 unclear (please specify):_____

K1. How long ago was the last update for this section?

1 within the last month
2 within the last three months
3 greater than three months ago

L. Does the layout of this section present a logical organization of the information and services available in this section?

Very well				Poorly
1	2	3	4	5

L1. Note the presence of the following design elements. **Check all that apply.**

Design Element	**Yes**	**No**	**Unclear (please specify):**
Very large graphics.....			
Small graphics.....			
Multiple colors			
Grayscale only			
Patterned background			
Solid background			
Blinking text or graphics			
"What's New "signs			
"Under Construction" (or similar) signs			
Other (please specify):_____			

L2. Do hotlinks connect to gopher menus?

1 yes
2 no
3 unclear (please specify):_____

M. Are headers worded clearly in this section?

1 yes
2 no
3 unclear (please specify):_____

M1. Are brief descriptions given to further describe the headers?

1 yes
2 no
3 unclear (please specify):_____

M2. Do hotlink headings and descriptions match the information found through those links? **(Examine no more than five hotlinks.)**

1 yes
2 no
3 unclear (please specify):_____

N. Are the hotlinks functional (no deadends or forwarding addresses)?

1 yes
2 no
3 unclear (please specify):_____

O. Is the content (e.g., subject matter) of this section appropriate for the expected audiences?

Very much 1 2 3 4 5 Not at all

O1. How many resources are available through the hotlinks? **(Check all that apply AND estimate the quantity.)**

		Many				None
__	Full-text references	1	2	3	4	5
__	Full-text publications	1	2	3	4	5
__	Maps	1	2	3	4	5
__	Visual media (e.g., photographs, videos)	1	2	3	4	5
__	Other:	1	2	3	4	5

O2. Does the content of this section match the website overview (found on the homepage)?

Very much 1 2 3 4 5 Not at all

O3. To what degree is professional language (e.g., **no** jargon, humor, condescension, bias, accusation, and chit chat) used in this section?

Very much 1 2 3 4 5 Not at all

O4. Are any of the information resources accessed through this section restricted (requires passwords or payment of fees)?

1 yes
2 no
3 unclear (please specify):_____

P. Are there services offered through this section? (Services mean that users interact with website, i.e. making reservations, retrieving electronic forms, etc.)

1 yes
2 no
3 unclear (please specify):_____

P1. If there are services, please try one. Is it fully functional?

1 yes
2 no
3 unclear (please specify):_____

P2. Is it appropriate to offer these services through a state library website for the expected audiences?

Very much 1 2 3 4 5 Not at all

P3. Are any of the services restricted (e.g., requires passwords or payment of fees)?

1 yes
2 no
3 unclear (please specify):_____

PART IV - General Website Evaluation

Summarize your impressions of the website based on your experience from completing parts two and three.

Content (i.e., subject matter)	very much 1	2	3	4	not at all 5
1. Does the overall content match the overview found on the homepage?					
2. Is the content of the website appropriate for the expected audience?	1	2	3	4	5
3. Does the content appear to overlap between the various pages of the website?	1	2	3	4	5
4. In your experience, is the content of the website original?	1	2	3	4	5
5. Is a clear and concise language style used throughout the website?	1	2	3	4	5
6. To what degree is the professional language (i.e., no jargon, humor, condescension, bias, accusation, and chit chat) used throughout the website?	1	2	3	4	5
7. Is the language used in the website appropriate for the expected audience?	1	2	3	4	5
Currency (Timeliness)					
8. Does the website appear to be current?	1	2	3	4	5

	very much				not at all
Bibliographic Control (i.e., information exactly matches its description)					
	1	2	3	4	5
9. Do hotlink headings and descriptions match the information found through those hotlinks?					
10. Is the terminology used in the website and hotlink headings consistent throughout the website?	1	2	3	4	5
Accuracy					
	1	2	3	4	5
11. To what degree does the website have typing, spelling, and grammar errors?					
Design (i.e., placement of text and graphics, color scheme and fonts, length of pages and headers)					
12. Does the website design seem cluttered?	1	2	3	4	5
13. Is design consistent throughout the website?	1	2	3	4	5
14. Do the graphics guide the user through the website?	1	2	3	4	5
15. Is the use of graphics appropriate for the website?	1	2	3	4	5
Quality of Hotlinks					
	1	2	3	4	5
16. To what degree do the hotlinks work?					
Navigability (i.e., ease of movement)					
	1	2	3	4	5
17. Is help information needed in order to navigate this website?					
18. To what degree is skill in navigating the Internet needed for navigating this website?	1	2	3	4	5
Overall rating	excellent				poor
	1	2	3	4	5
19. Rate the quality of the content.					
20. Rate the quantity of information provided.	1	2	3	4	5
21. Rate the services provided by the website.	1	2	3	4	5

	excellent				poor
22. Rate the design of the website.	1	2	3	4	5
23. Rate the quality of the hotlinks.	1	2	3	4	5
24. Rate the quality of help information provided.	1	2	3	4	5
25. Rate the navigability of the website.	1	2	3	4	5

THANK YOU FOR YOUR PARTICIPATION!

Address any questions to:

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Appendix B - Sailor Assessment State Library Web Site Analysis Assignment

February 27, 1996
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For this assignment, you will be comparing Maryland's Sailor state-wide world-wide web (WWW) library network to that of five other state-wide WWW library networks. Each of you will actually be comparing Sailor to one other state network. Half of the class will compare the networks using a text-based WWW browser known as Lynx, while the other half of the class will compare the networks using a graphical WWW browser such as Netscape or Mosaic. For each comparison you will be asked to complete the attached scripted questionnaire that asks specific questions about your experience with the network on such issues as content and formatting.

Below is a list of the state-wide networks selected for this study:

Maryland
Nebraska
North Carolina
South Carolina
Utah
Wisconsin

Selection for these networks was initially random. Some selections were removed from consideration as some state library networks were gopher-based. The selected Web sites are available from the following Web-based state library network index:

http://www.state.wi.us/0/agencies/dpi/www/statelib.html

To carry out the analysis for your assigned state network, point your browser to the above address and then go to the state's network. In some cases, there may be both a gopher (designated by a "g") and a Web site for the state (designated by a "w"). Be sure to select the Web site. To get to Sailor, point your browser to the following URL:

http://www.sailor.lib.md.us/

Thank you for your participation! Direct any questions you might have concerning the assignment to John Bertot at the email address/phone number listed above.

SAILOR NETWORK SERVER AND ASCEND ROUTER STATISTICS

SAILOR NETWORK USAGE STATISTICS

As part of this study, the researchers, with assistance from the Sailor Operations Center staff, collected both Sailor network server usage statistics and case site Ascend router usage statistics.[3] The initial methodology intended to simultaneously collect case site and server statistics throughout March 1996. As this was the first attempt at Ascend router usage collection, however, technical difficulties prevented the collection of Ascend router statistics during March 1996. This section, therefore, presents Ascend router and Sailor network server statistics from two differing time periods -- March 1996 for the Sailor network and May 20, 1996 through July 25, 1996 for case site Ascend routers.

The types of statistics gathered during this study include the following:

- Sailor network server sessions initiated by IP (Internet Protocol) address to determine from where server traffic is initiated (see Figure 1);
- Sailor network server sessions by day of week (see Figure 2);
- Sailor network server sessions by hour of the day (see Figure 3);
- Sailor network server most frequent file requests (see Figure 4);
- Sailor network server requests to Maryland state agency Web sites (see Figure 4);
- Sailor network Help Desk usage statistics for March 1996 (see Figures 5 and 6);
- Case site Ascend router usage by hour (see Figures 7-10);
- Case site Ascend router traffic by day (see Figure 11); and,
- Case site Ascend router traffic call duration (see Figure 11).

As will be discussed in a later section, other usage statistics can and should be collected by Sailor network-connected entities.

During this study, no Maryland library that connected to the Sailor network through a DLDS-supported connection did so through a log-on procedure. As such, users of Sailor connected to the sever as "guest" (as indicated in Figure 1 through the "guest" designation). Furthermore, a majority of Maryland libraries did not have a Point-to-Point (PPP) type of connection to the Sailor network. The

[3]During this study, the Sailor network operators were in the process of terminating the Sailor gopher server, and did so on June 30, 1996. The declining gopher statistics, therefore, reflect the impending gopher server shutdown.

basic Sailor network connection, therefore, consisted of a non-graphical "Lynx" or gopher connection to the Sailor home page or gopher server (again included in the "guest" category in Figure 1). Some Maryland library systems, however, established separate PPP connections. These are reflected in the "Web" category in Figure 1.

For March 1996, the Sailor Web server received a total of 592,979 hits and the Sailor Gopher server received a total of 285,622 hits (see Figure 1). Of those 592,979 Web hits, 396,497 were "guest" logins. Of the 285,622 Gopher hits, 243,790 were "guest" logins. As Figure 1 demonstrates, a majority of the Sailor network "guest" logins originate from Maryland public libraries, with 95.0% of all "guest" logins. The top five public library system users of the Sailor servers within the Maryland public library community for March 1996 were Montgomery County (16.96%), followed by Enoch Pratt Free Library (13.10%), Harford County (8.24%), Anne Arundel County (8.19%), and Prince George's County (7.23%). The top three non-"guest" login users of the Sailor Web server are .com (commercial) users (9.30%), followed by .net (network provider-most likely users that purchase Internet accounts through Internet service providers) users (4.60%), and .edu (academic institution) users (3.62%).

In general, Sailor server traffic is steady throughout the week (see Figure 2). The slowest Sailor network use day in March was Sunday, with 105,376 total Gopher and Web hits, while the most heavy network traffic day in March was Friday, with 144,223 total Gopher and Web hits. The Sailor Gopher and Web server use peaked between the hours of 2:00PM and 4:00PM, with 128,109 hits (see Figure 3). It is interesting to note that Sailor server traffic was steady (range of hits from 65,923 to 128,108) between 8:00AM and midnight each day, while the least amount of server traffic was generated between midnight and 8:00AM each day (range of hits from 10,688 to 30,987).

Not surprisingly, the most heavily accessed file on the Web server during March 1996 was the Sailor home page with 169,831 hits (28.66%), as each Web session generally begins at the home page (see Figure 4). In terms of content-oriented Sailor files, the top five most accessed files were the Topics (e.g., Arts & Humanities, Business & Consumer) pages with 103,053 (17.38%) hits, followed by the Forms (e.g., Lycos and Webcrawler) searches pages with 70,881 (11.95%) hits, the Picture file (e.g., .gif images) pages with 42,165 (7.11%) hits, the About Sailor (e.g., Sailor project information) pages with 29,194 (4.92%) hits, and the Documents (e.g., miscellaneous documents, e-mail gateway) pages with 28,471 (4.80%) hits. Figure 4 demonstrates that the Maryland state agency pages were not heavily used during March 1996, comprising only 13.10% of the Sailor Web server traffic. As Figure 4 also indicates, the Sailor Gopher was predominantly used for external Internet connections, with 64,316 (22.52%) hits.

During March 1996, the Sailor Operations Center (SOC) Help Desk responded to 2,298 help requests (see Figure 5). Of those requests, 562 (see Figure 14, Staff 5 and Staff 6) -- 18.7% -- were received via e-mail. In addition, 365 Help Desk requests -- 12.2% -- were from Metnet (Maryland's educational K-12 network)

Figure 1. Sailor Server Traffic for the Month of March 1996 by IP Address.

		Guest[1]	%	Gopher[2]	%	Web[3]	%
Sailor				**243,790**	**85.35%**	**396,497**	**66.87%**
IP Address							
.lib.md.us							
	Allegany (234)	1,072	0.64%	0	0.00%	0	0.00%
	Anne Arundel (192)	13,760	8.19%	147	0.05%	9,109	1.54%
	Baltimore County (200)	9,494	5.65%	859	0.30%	6,431	1.08%
	Calvert (226)	1,138	0.68%	0	0.00%	0	0.00%
	Carroll (196)	7,179	4.28%	305	0.11%	2,001	0.34%
	Cecil (206)	7,525	4.48%	0	0.00%	1	0.00%
	Dorechester (250)	1,031	0.61%	0	0.00%	0	0.00%
	EPFL (192)	21,990	13.10%	0	0.00%	3,705	0.62%
	Frederick (232)	9,242	5.50%	0	0.00%	0	0.00%
	Garrett (236)	831	0.49%	0	0.00%	0	0.00%
	Harford (204)	13,838	8.24%	0	0.00%	0	0.00%
	Howard (212)	9,361	5.57%	124	0.04%	0	0.00%
	Kent (252)	1,885	1.12%	0	0.00%	0	0.00%
	Montgomery (220)	28,477	16.96%	0	0.00%	0	0.00%
	Prince George's (216)	12,141	7.23%	0	0.00%	0	0.00%
	Queen Anne (254)*	3	0.00%	0	0.00%	0	0.00%
	Southern Md (224)	2,048	1.22%	94	0.03%	0	0.00%
	St. Mary's (228)	2,021	1.20%	0	0.00%	0	0.00%
	Talbot (246)	3,049	1.82%	0	0.00%	0	0.00%
	Washington (236)	8,932	5.32%	0	0.00%	0	0.00%
	Wicomico (244)	4,143	2.47%	15	0.01%	0	0.00%
	Md Elec. Capital (193)	0	0.00%	8	0.00%	2,060	0.35%
	SUBTOTAL	**159,163**	**95.00%**	**1,552**	**0.54%**	**23,307**	**3.93%**
IP Address							
.md.us		709	0.42%	461	0.16%	2,900	0.49%
.com		1,082	0.64%	7,362	2.58%	55,119	9.30%
.edu		1,428	0.85%	11,825	4.14%	21,463	3.62%
.gov		607	0.36%	2,764	0.97%	8,035	1.36%
.us		109	0.06%	1,444	0.51%	833	0.14%

Figure 1. Sailor Server Traffic for the Month of March 1996 by IP Address.

		Guest[1]	%	Gopher[2]	%	Web[3]	%
.mil		357	0.21%	789	0.28%	2,200	0.37%
.net		377	0.22%	3,616	1.27%	27,298	4.60%
.org		136	0.08%	764	0.27%	3,260	0.55%
	SUBTOTAL	**4,805**	**1.49%**	**29,025**	**10.16%**	**121,108**	**20.42%**
.ar		28	0.02%	4	0.00%	0	0.00%
.au		55	0.03%	66	0.02%	176	0.03%
.ca		292	0.17%	454	0.16%	444	0.07%
.cz		33	0.02%	24	0.01%	121	0.02%
.uk		22	0.01%	73	0.03%	277	0.05%
other non-us		30	0.02%	464	0.16%	1,831	0.31%
	SUBTOTAL	**460**	**0.27%**	**1,085**	**0.38%**	**2,849**	**0.48%**
unresolved IPs and failed requests		2,321	1.38%	10,170	3.56%	45,431	7.66%
TOTALS**		**167,913**	**100.00%**	**285,622**	**100.00%**	**592,979**	*100.00%

[1]The "guest" logins equate to the number of users that accessed the Sailor network servers as guests. In this figure, 167,913 guest logins generated 243,790 gopher and 396,497 Web network server hits, respectively (see the "Sailor" row in the figure). The IP addresses in the "guest" column indicate the addresses that generated the guest login -- e.g., the Baltimore County library system users generated 9,494 guest logins to the Sailor network servers.

[2]The "Gopher" column is the number of gopher server hits generated by users of the Sailor network. Of the 285,622 total hits, 243,790 were generated by "guest" logins. The remaining hits were generated by library system local area networks or OPACS that could directly access the Sailor gopher and other non-Ascend router dial-up users.

[3]The "Web" column is the number of Web server hits generated by users of the Sailor network. Of the 592,979 total hits, 396,497 were generated by "guest" logins. The remaining hits were generated by library system local area networks or OPACS that could directly access the Sailor Web page and other non-Ascend router dial-up users.

*Site not open to public during March 1996.
**Totals do not sum to 100.00% in all cases due to rounding errors as well as missing data points.

Figure 2. Sailor Network Server Use by Day of Week for March 1996.

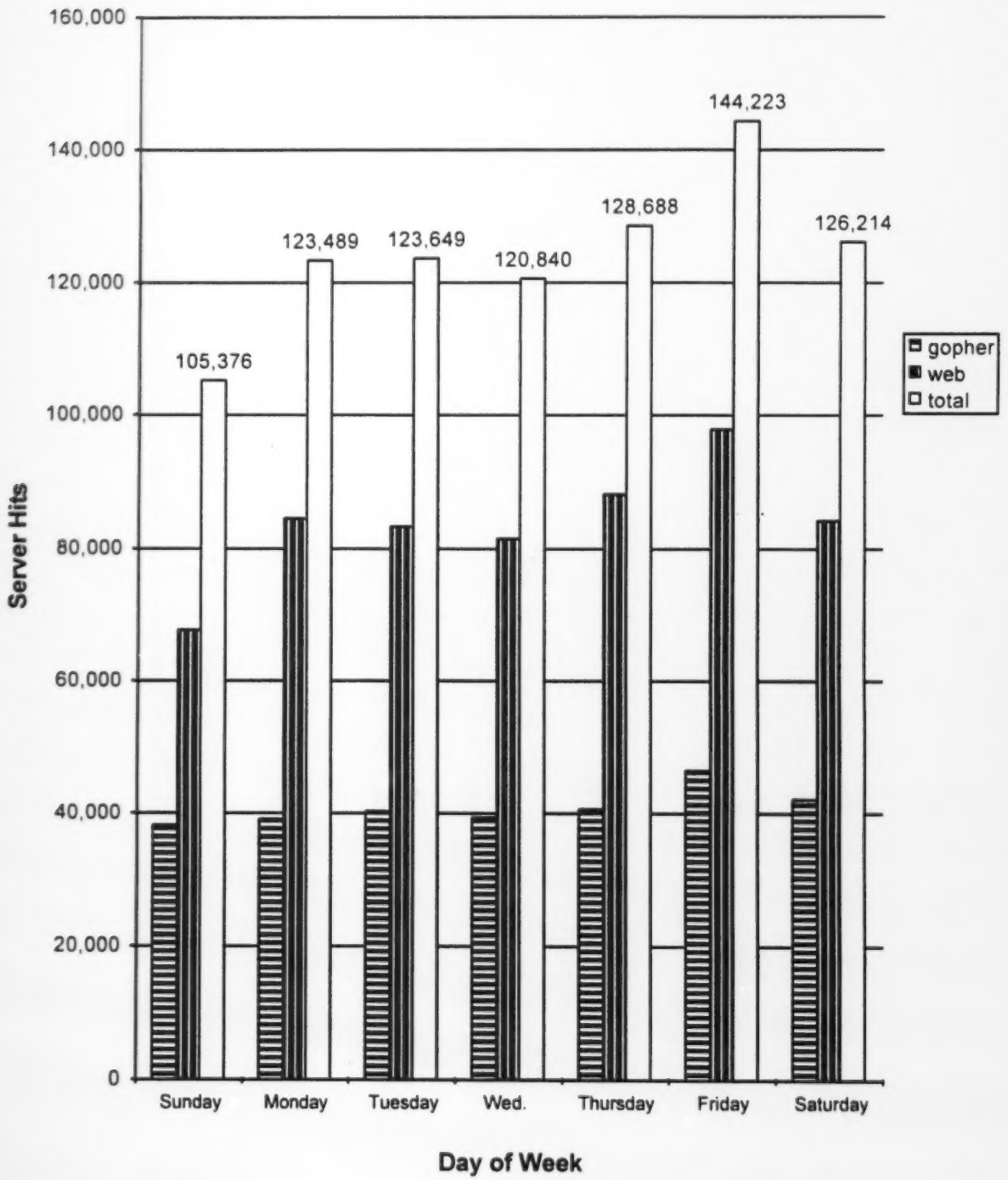

Figure 3. Sailor Network Server Use by Hour for March 1996.

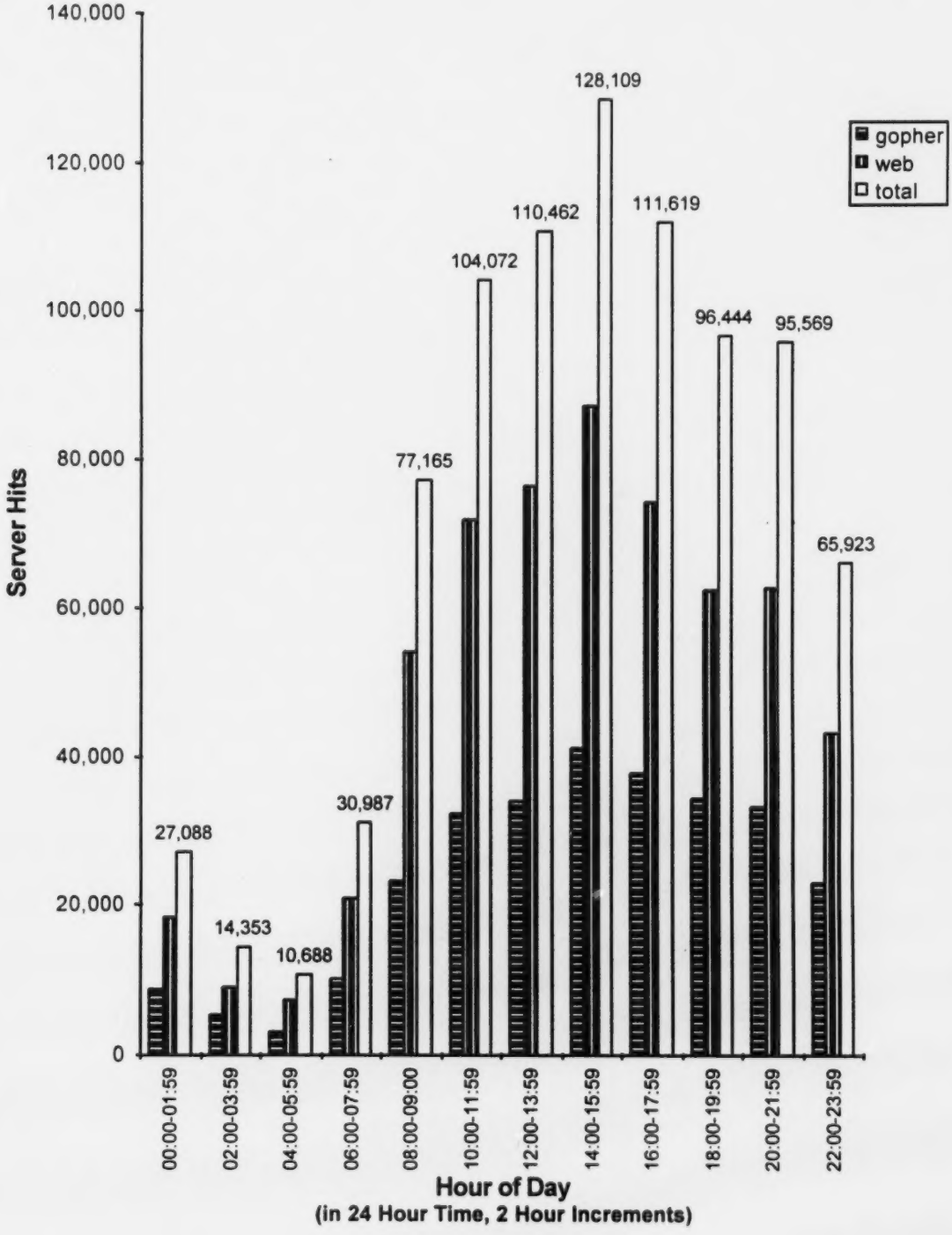

Figure 4. Sailor Server File Usage for March 1996.

Directory	Hits	%	Comments
WEB			
root	169,831	28.64%	Home page
sailor	29,194	4.92%	About sailor project
md	7,583	1.28%	Maryland government page
mdcounty	9,310	1.57%	Maryland county pages
mdlibs	7,738	1.30%	Maryland libraries
mdedu	3,149	0.53%	Maryland education
mgiug	2,884	0.49%	State government Internet Users Group
topics	103,053	17.38%	Topic homepages
forms	70,881	11.95%	Search forms
gifs	42,165	7.11%	Picture files
docs	28,471	4.80%	Misc. documents, includes e-mail gateway page
cgi	22,813	3.85%	Scripts and searches
			GPO: 1785
			MEC imagmap: 6623
			MEC searches: 1448
			Full-text Sailor: 1343
			URL Sailor: 8615
			State phone dir: 824
			Minority biz dir: 528
			Maryland state docs bib: 457
lynx	12,524	2.11%	
stats	2,069	0.35%	
archives	1,132	0.19%	Old "What's New, Hon"
gpo	429	0.07%	Government Printing Office help file
SUBTOTAL	**515,367**	**86.9%**	
MD AGENCIES			
mec	65,717		Maryland Electronic Capital
dllr	5,536		Dept of Labor, Licensing, and Regulation
msla	2,364		Lottery
dmil	1,133		Military
mda	968		Agriculture
msde	930		Education
sra	341		Retirement
mgcos	187		Governor's Commission on Service

Figure 4. Sailor Server File Usage for March 1996.

Directory	Hits	%	Comments
msbca	101		Board of Contract Appeals
bpw	100		Pubic Works
oah	89		Administrative Hearings
mema	51		Emergency Management
pscp	48		School Construction
osp	20		State Prosecutor
wab	17		Wine Advisory Board (ag)
SUBTOTAL	**77,602**	**13.1%**	
TOTAL	**592,969**	**100.0%**	
GOPHER			
root	70,819	24.79%	Homepage
internet	64,316	22.52%	External connections
findInfo	33,369	11.68%	By topic
govinfo	12,917	4.52%	Government information
looklibs	12,463	4.36%	Libraries
aboutsailor	6,946	2.43%	Information file on Sailor
comminfo	2,661	0.93%	Community information
whats	1,037	0.36%	Whats new
TOTAL	**285,622**	**71.61%***	

*Totals do not sum to 100.00% to rounding errors as well as missing data points.

Figure 5. SOC Sailor Help Desk Log for March 1996.

	Sailor	Pratt	Metnet	Other	Total
Staff 1	178	84	60	401	723
Staff 2	241	88	246	122	697
Staff 3	186	148	28	12	374
Staff 4	226	76	14	10	326
Staff 5	0	81	0	0	81
Staff 6	481	0	0	0	481
Staff 7	98	52	10	31	191
Staff 8	74	34	7	10	125
Total	1484	563	365	586	2998

Notes on the above data:

The number of calls in the category Other for **staff 1** is large because that person was responsible for retrieving voice-mail and distributing messages to other staff (especially voice-mail that accumulated overnight).

Staff 5 corresponds to the flow of e-mail to a Pratt Accounts Administration e-mail address.

Staff 6 corresponds to the flow of e-mail to sailor@mail.pratt.lib.md.us (sailor@epfl2). There are two sources of mail flow sailor@mail.pratt: Feedback, Please (on sailor.lib.md.us) and mail posted directed to that address from the senders e-mail account.

Figure 6. Help Desk Calls by County for March 1996.*

County	Logged Calls	Percentage of Total Calls
Anne Arundal	39	7.3%
Baltimore City	29	5.4%
Baltimore County	84	15.7%
Calvert County	4	0.7%
Carroll County	15	2.8%
Cecil County	8	1.5%
Charles County	1	0.2%
Dorchester County	6	1.1%
Frederick County	12	2.2%
Garrett County	7	1.3%
Harford County	31	5.8%
Howard County	40	7.5%
Kent County	18	3.4%
Montgomery County	35	6.5%
Enoch Pratt	82	15.3%
Prince George's County	37	6.9%
Queen Anne's County	2	0.4%
Somerset County	1	0.2%
Talbot County	14	2.6%
Washington County	12	2.2%
Wicomico County	7	1.3%
Worcester County	1	0.2%
Other	49	9.2%
Total	535	100.0%

*This figure is best viewed as a rough estimate of Help Desk use by County. Not all incoming calls to the SOC Help Desk are tracked by location.

users. The SOC Help Desk receives calls from nearly all Maryland library systems, as well as from other sources (see Figure 6). Baltimore County and Enoch Pratt Free Library users, by far, generated the most Help Desk calls, with 15.7% and 15.3%, respectively.[4]

Figures 7 through 10 show the Ascend router traffic for the four case sites of Enoch Pratt Free Library, Harford County, Montgomery County, and Wicomico County.[5] The data corroborates that of the Sailor server traffic data presented in Figure 4, indicating that the case site Ascend routers received the most number of calls between the hours of 8:00AM and midnight. Figure 11 also shows that the Enoch Pratt Free Library Ascend router averaged the highest number of calls per hour between May 20, 1996 and July 25, 1996, with 20.2 calls per hour, followed by Montgomery County with 15.9 calls per hour, Harford County with 9.1 calls per hour, and Wicomico County with 3.2 calls per hour. The Enoch Pratt Free Library Ascend router averages 420.3 calls per day, followed by the Montgomery County router with 263.7 calls per day, the Harford County Ascend router with 121.2 calls per day, and the Wicomico County router with 23.6 calls per day (see Figure 11). On average, calls to the Enoch Pratt Free Library Ascend router last 63.1 minutes, calls to thee Harford County Ascend router last 229.9 minutes, calls to the Montgomery County router last 63.75 minutes, and calls to the Wicomico County router last 168.7 minutes (see Figure 11).[6]

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[4]The SOC Help Desk did not routinely track all incoming calls by originating location during this data collection activity. In addition, although the Help Desk attempted to gather originating call Zip Code information, not all caller Zip Code information was collected. The final report *Compendium* contains a listing of the originating call Zip Code information captured during March 1996. As such, caller county and Zip Code data presented in this report are best considered as rough estimates of the SOC Help Desk usage by location.

[5]As indicated on the figures, these data were collected between May 20, 1996 and July 25, 1996, due to technical difficulties in collecting Ascend router data during March 1996.

[6]During the data collection activity, the case site routers did not have any time-out features that would log off idle connections. Furthermore, Ascend router technical difficulties during data collection activities influenced the ability to capture accurate logon time data. As such, these statistics are best viewed as estimates of call duration.

Figure 7. Total EPFL Ascend Router Calls by Hour (May 20, 1996-July 25, 1996)

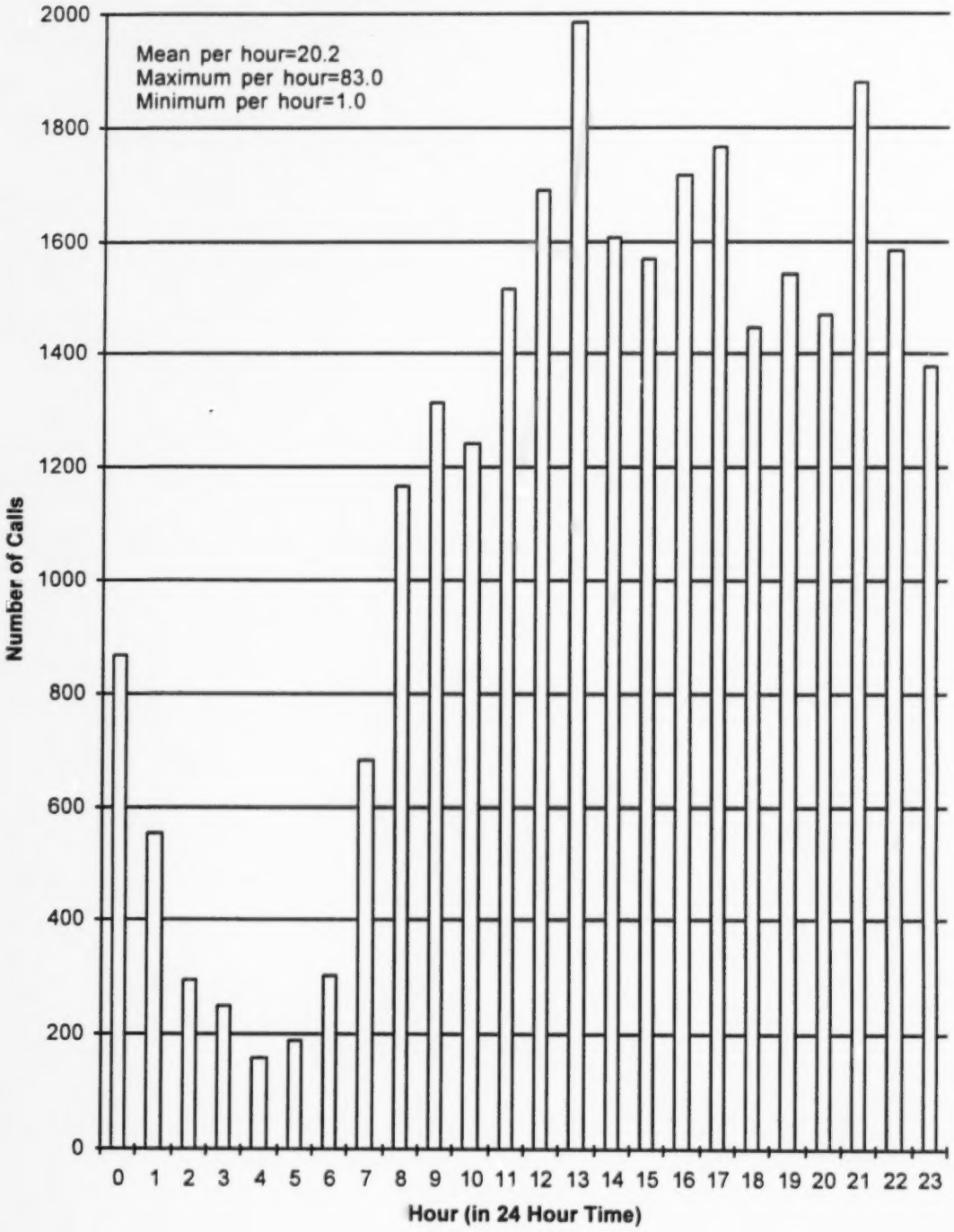

Figure 8. Total Harford County Ascend Router Calls Per Hour (May 20, 1996-July 25, 1996)

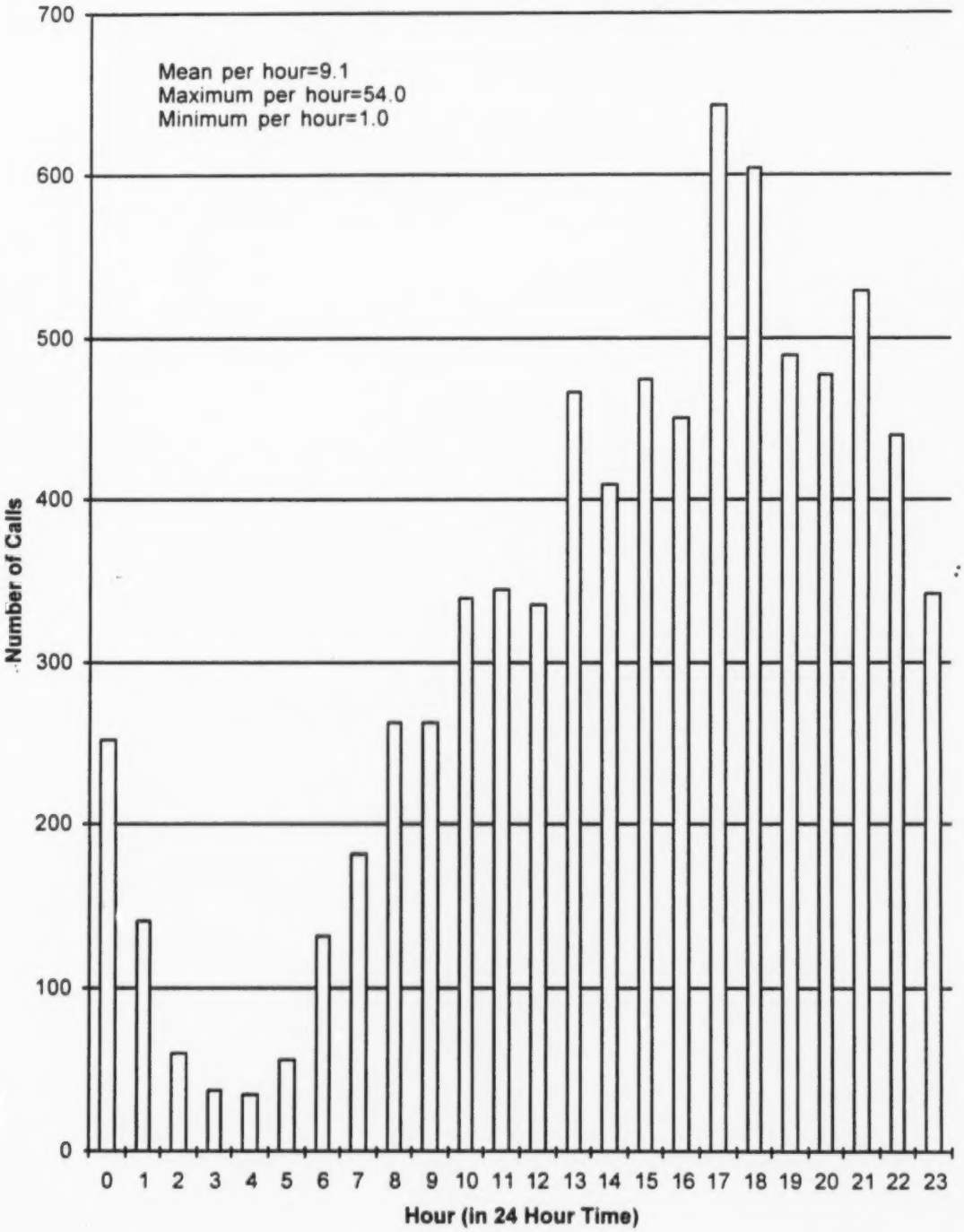

Figure 9. Total Montgomery County Ascend Router Calls by Hour (May 20, 1996-July 25, 1996)

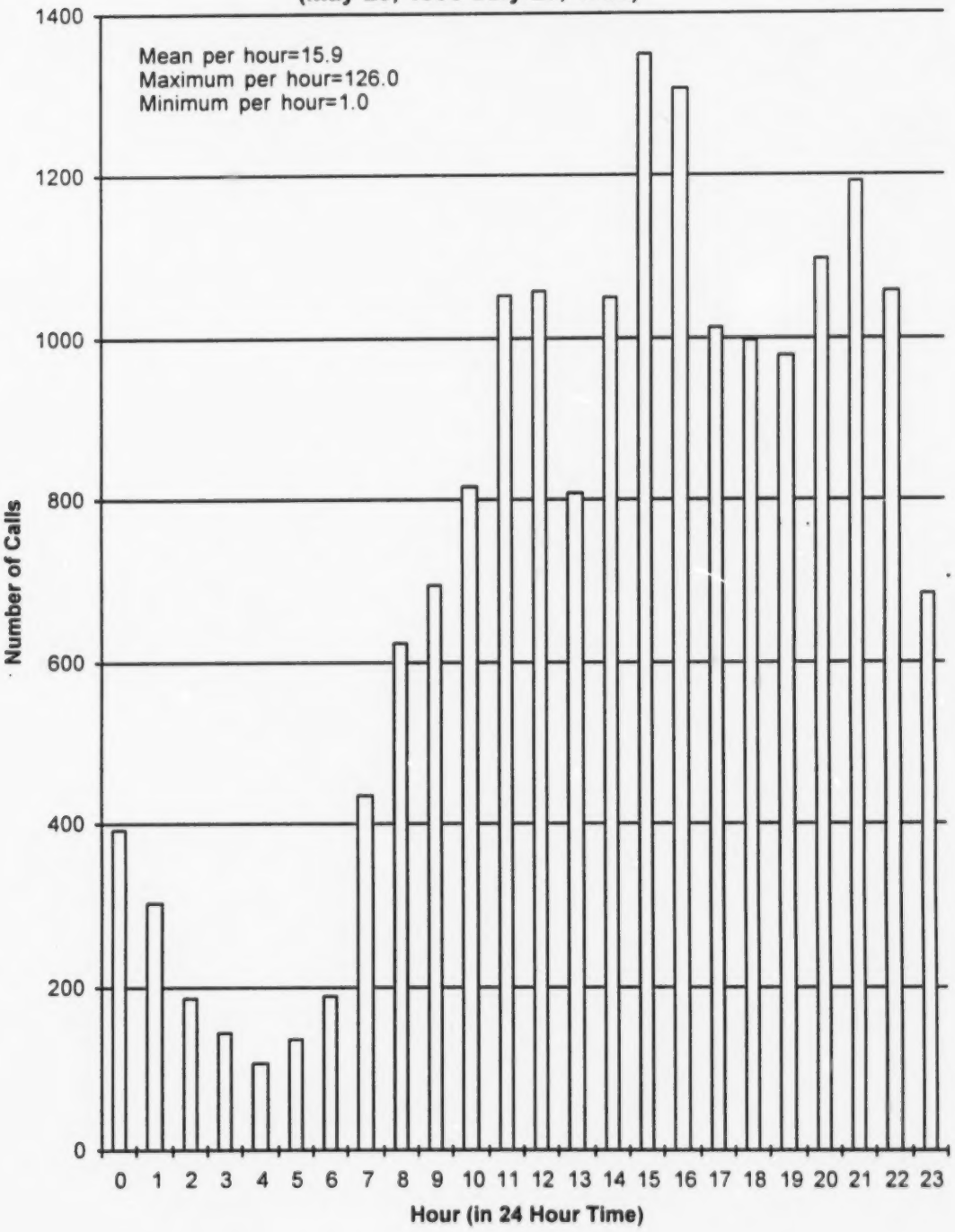

Figure 10. Total Wicomico County Ascend Router Calls by Hour (May 20, 1996-July 25, 1996)

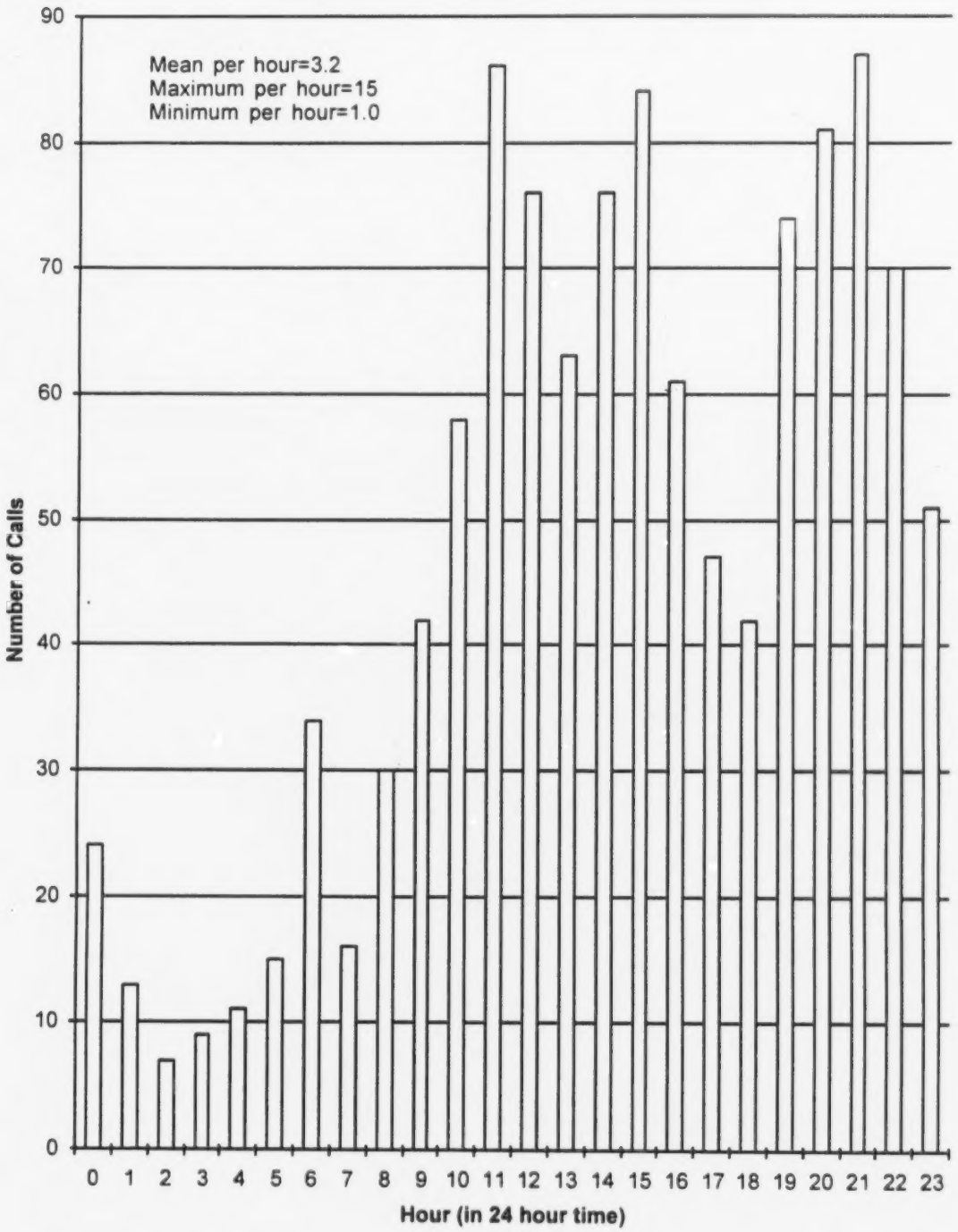

Figure 11. Ascend Router Calls Per Day and Call Duration (May 20, 1996-July 25, 1996).*

	Ave. Calls Per Day	Max. Calls Per Day	Min. Calls Per Day	Ave. Duration of Calls (in Minutes)	Max. Duration of Calls (in Minutes)	Min. Duration of Calls (in Minutes)
Enoch Pratt (n=28,157)	420.3	791.0	275.0	63.1	46,047	<1
Harford County (n=7,759)	121.2	259.0	44.0	229.9	46,029	<1
Montgomery County (n=17,666)	263.7	853.0	63.0	63.75	46,061	<1
Wicomico County (n=1,157)	23.6	50.0	1.0	168.7	36,110	<1

*These statistics are best seen as estimates. The numbers provided are influenced substantially by such factors as router up time, router modem card operation, and router statistical gathering software on the Sailor host machine. Also, during this data collection period, no time-out feature on idle router connections were in place, as the average and maximum duration of calls indicate.

The statistics indicate that the Sailor Gopher and Web servers are used primarily by Maryland citizens dialing in through a county library system. The data also indicate that use of Sailor varies greatly between Maryland county library systems -- a reflection of which county systems have had Sailor network connections for a greater amount of time as well as local technology initiatives, county demographics in terms of education, in-home technology, and access to technology through K-12 and academic institutions. Finally, the data indicate that the Gopher server is primarily an Internet gateway, used to connect its users to other Internet-based services, whereas the Web server is primarily a means through which users access topical, state and local government/ community information, and perform Internet resource searches.

ADDITIONAL WEB SERVER AND ROUTER STATISTICAL ANALYSIS

A key component to measuring the efficiency and effectiveness of World-Wide Web (Web)-based resources is an assessment of the usage of the Web site itself. That is, determining the overall Web site's traffic in such terms as the number of users, portions of the site that are accessed, and number of document downloads in a given time frame. Such an evaluation enables the maintainers, policy makers, and stakeholders of the Web site to determine the site's:

- Traffic and overall ability to meet the demands of that traffic
- User community, to include the accessing host IP address and type of browser
- Error messages received by the site's users.

Such Web server data enable the Web administrators to identify Web site usage patterns as well as server performance measures.

In general, there are four standard text-based log analysis files that Web servers automatically generate. These files are the:

- *Access Log*, which provides such Web user data as IP/Domain name, time and date of access, server pages accesses, and frequency of document downloads.
- *Agent Log*, which provides type and version of browser (e.g., Netscape) and browser platform (e.g., Mac, Unix) data.
- *Error Log*, which provides data on any user-received error while accessing the site. Such data includes "file not found" errors and user-halted page hits (i.e., lengthy page loading due to large graphic images).
- *Refer Log*, which provides Web administrators with data concerning other Web sites that link to the their site.

These files provide a comprehensive and robust set of data concerning Web site use from a variety of key areas: users, content, and system capabilities.

Due to researcher access limitations to log files, as well as such factors as SOC time constraints, the newness of Web statistical gathering activities, and the lack of a formal Web statistical gathering process, the researchers were only able to access and analyze *Access Log* data.

SOC should formalize a process by which all available Sailor log files are analyzed and reported on a monthly basis.

System Overhead and Data Collection Issues

The data files generated by most Web servers are text tab-delimited files. Such files are ready to import into most statistical and spreadsheet packages for analysis, thus requiring no file translation activities by Web site administrators.

Another concern is that of system overhead that log files generate. A Web server that receives an average of 15,000 hits per week will generate log files totaling approximately 4 megabytes of data (4 megabytes in all for the four log files discussed above). By rotating the log files on a weekly basis, SOC will incur little system overhead.

Ascend Router Statistics

A less easily resolved data collection issue is that of Ascend router data. For this study, the Ascend router site transaction data was collected centrally on an SOC network server. This method incurred substantial Sailor network backbone and SOC server overhead as each transaction on a router was mailed electronically to the SOC server.

Moreover, the data provided was limited to basic router use data such as time of day load, average log on time, and average number of calls. Additional data is needed for library system management issues. These data include, but are not limited to:

- *Modem saturation rate.* This provides an indication of when a router's modem pool is operating at capacity.

- *User busy rate.* Such a measure, based on modem saturation, would provide a rough estimate of the number of users (based on the number of calls) that do not gain access to the router due to modem saturation.

- *Sailor versus library system use.* When dialing into a library system router, most users receive a choice to enter the library's OPAC or go directly to Sailor. Library system administrators expressed the need to have data on user router use. [Note: this would be a rough measure, as most library OPACs allow users to access Sailor from the OPAC area].

The above provide some future Ascend router data collection possibilities. Three key issues to be resolved, however, are: (1) The ability of library systems to collect this data to reduce SOC system and Sailor network backbone overhead; (2) The expertise required to export Ascend router data files into some usable format for statistical analysis; and, (3) The ability of DLDS, SOC, and library system staff to perform analysis on the collected data.

SCHOOL MEDIA SPECIALIST AND SAILOR MASTER TRAINER SURVEYS

SAILOR MASTER TRAINER SURVEY

As part of the overall Sailor network development process, DLDS sponsored and funded the Sailor Master Trainer program. The Master Trainer program was a means through which DLDS could promote community use of the Sailor network through community-based Sailor expert trainers that would offer regular Sailor-based training programs. This "train-the-trainers" approach extended beyond public libraries, as Master Trainers did not need to be public librarians -- K-12 educators and school library media specialists, for example, could also qualify for the Master Trainer program. At the time of this study, DLDS had provided approximately 105 Master Trainers with expert Sailor training.

In order to get a sense of Master Trainer community training activities and key training issues, the researchers conducted a mail survey with the Master Trainer population (see Appendix A for a copy of the survey). The survey was mailed to all Sailor Master Trainers in February 1996. A total of 105 surveys were distributed the Master Trainers and 66 were returned, for a 62.9% response rate. Of the respondents, 45.2% were school media specialists, 32.3% were Other (e.g., academic librarians, higher education staff), 19.4% were public librarians, and 3.2% were K-12 teachers.

Findings from the survey are presented below by topic area. The topic areas present the context in which the Master Trainer survey occurred and, as such, provide a rich framework for identifying Sailor network-based training issues.

Updating the Skills of Organization Personnel

Study participants found that the proliferation of the electronic networked environment, and its introduction throughout their respective organizations, required new skills -- such as computer and network literacy -- for organization staff. In some cases, these new skill requirements were seen as necessary for the future survival of the organization; in others, these skills were viewed as necessary to keep up with community demands.

Interestingly, study participants did not find that the Sailor network forced new roles on their organizations -- public libraries were still in the business of serving as community-based information gateways, schools were still in the business of educating students. Rather, participants stated that the Sailor network added a new means -- and level of complexity -- through which to carry out traditional roles. Master Trainer respondents, for example, found that the three top challenges they faced in providing Sailor network training were adequate equipment (35.2%), adequate training facilities (29.6%), and adequate time to keep up with continually changing Sailor- and Internet-based resources (22.2%) (see Figure 1). As the data indicate, none of the challenges identified by Master Trainers contend with fundamental role changes, but rather concern physical adequacy in terms of equipment, training facilities, and time.

Figure 1. Sailor Network Training Challenges Identified by Master Trainers.

Sailor Network Training Challenge (n=66)	Percentage Challenge
Adequate Training Equipment	35.2%
Adequate Training Facilities	29.6%
Adequate Time	22.2%
Reliability of Connection	7.4%
Access to Sailor Network	5.6%

Providing Training to Community Organizations

Participants identified providing Sailor network-based training to community organizations outside the public library setting as key to the success of the Sailor network. Participants realized that for Sailor to become a community and statewide resource, the network's user base needed to be as broad as possible and extend beyond the public library setting. Many library systems were in the process of initiating training programs that reached out to the K-12, business, and local government communities -- a process facilitated through DLDS' Master Trainer program.

In all, Master Trainers provide training to library staff (69.7%), teachers (69.7%), students (51.5%), library patrons (28.8%), and other (28.8%, e.g., parents, business leaders, and government officials) (see Figure 2). Overall, the mean training class size is 10.8 individuals, with a range of 1-40 individuals, and on average, Master trainers have trained 100.9 individuals each, with a range from 1-500 (see Figure 2). Master Trainers offer courses on the general use of Sailor (92.4%), technical training (e.g., hardware/software skills) (66.7%), special topics (e.g., K-12, business) (34.8%), Internet navigation (18.2%), and other (13.6%) (see Figure 2).

Master Trainer-taught courses are predominantly offered 1-2 times per week with 47.4%, followed by none per week with 38.6%, more than five times per week with 8.8%, and 3-4 times per week with 5.3% (see Figure 3). It is interesting to note that the Master Trainers are nearly evenly split, 48.3% to 46.7%, as to whether they anticipate the number of courses they offer per week to remain the same or increase within the next 12 months. Only 5.0% of the Master Trainers anticipate a decrease in the number of courses they offer within the next 12 months (see Figure 3). Master Trainers indicated that they provide training in several locations, including schools (62.1%), public libraries (30.3%), other (e.g., government buildings) (30.3%), and community centers (3.0%).

Figure 2. Master Trainer Types of People Trained and Types of Classes Offered.

Types of People Trained (n=66)	Percentage Trained	Types of Training Classes (n=66)	Percentage Class
Library Staff	69.7%	General Sailor Use	92.4%
Teachers	69.7%	Special Topics	34.8%
Students	51.5%	Internet Navigation	18.2%
Library Patrons	28.8%	Technical Training	66.7%
Other	28.8%	Other	13.6%
Mean class size = 10.8, range 1-40; Mean number trained = 100.9, range 1-500.			
Percentages do not total to 100.0% as Master Trainers were asked to indicate all the types of people and topics for which they provide Sailor network training.			

Figure 3. Master Trainer Current and Within Twelve Months Number of Classes per Week.

No. of Classes/Week (n=66)	Percentage Offered	No. of Classes/Week in Next 12 Months (n=66)	Percentage Classes
1-2 classes/week	47.4%	Remain the same	48.3%
3-4 classes/week	5.3%	Decrease	5.0%
5 or more classes/week	8.8%	Increase 1-2 classes/week	35.0%
No classes/week	38.6%	Increase 3-4 classes/week	6.7%
		Increase more than 4 classes/week	5.0%
Mean time spent training = 6.0%, range 0.0%-25.0%.			

The data indicate, therefore, that the Master Trainer program is reaching out to various community-based organizations and providing a variety of Sailor network training classes. It is unclear as to the extent to which the Master Training program will expand in terms of the number of trainers and training curriculum over the next year. The expansion/lack of expansion of the Trainer program and curriculum can have a substantial impact of the promotion of the Sailor network beyond the library community.

Instituting Continual Improvement Training Sessions

A major concern of study participants was that Internet training in general and Sailor network training in particular were not one-time events. Rather, in order to maintain proficiency in the Internet and Sailor, participants realized the need for on-going training sessions for community and staff alike. As such, the training burdens on, for example, the Master Trainers, would only increase due to the training needs of first-time users as well as those users returning for "refresher" courses.

Participants, however, lamented the capability of their organizations to keep pace with their own one-time training needs, muchless the one-time and on-going training needs of their user communities. This situation is further exacerbated by the fact that over half of the Master Trainer respondents indicated that the number of their training classes will either remain the same (48.3%) or decrease (5.0%), indicating that current training shortfalls will only increase (see Figure 3).

Of further interest is that Master Trainers, on average, spend 6.0% of their time on Sailor network training activities (see Figure 3). Participants acknowledged that Sailor network and Internet training is a full-time need. The reality, however, is that the Sailor training functions are being staffed with individuals taking on the training responsibility *in addition to* regular duties. Such an approach to Sailor network training will not adequately serve, as participants indicated, the larger training needs of the various community users.

Survey of Sailor Master Trainers

Instructions: This survey is designed to help us gain an understanding of the role of the Sailor Master Trainers in their communities. Please answer the questions below by marking the appropriate selection or filling in the answer. Your responses will remain confidential. Thank you for your participation! Please contact John Bertot, Department of Information Systems, University of Maryland Baltimore County, Baltimore, MD 21228, (410) 455-3883 phone, (410) 455-1073 fax, email: bertot@umbc.edu, with any questions concerning the survey.

1. Name of Respondent: _____ Title (other than Master Trainer): _____

   Internet E-mail Address: _____

2. Please indicate the types of people within your community that you train (Check [X] all that apply):

   ❑ Library staff ❑ Teachers ❑ Students ❑ Library patrons ❑ Other (Please specify): _____

3. Please indicate the types of training classes you provide (Check [X] all that apply):

   ❑ General Sailor use
   ❑ Special topics (e.g., K-12, business)
   ❑ Other (Please specify): _____
   ❑ Internet navigation (e.g., finding documents/getting around the Internet)
   ❑ Technical training (e.g., hardware/software skills)

4. How many classes do you offer in a typical week?

   ❑ None ❑ 1-2 ❑ 3-4 ❑ 5 or more

5. In the next 12 months, do you expect your course offerings to (Check [X] only one):

   ❑ Remain the same ❑ Increase by 1-2 classes/wk. ❑ Increase by 3-4 classes/wk. ❑ Increase by more than 4 classes/wk.
   ❑ Decrease

6. On average, what is the group size of your classes? _____ people

7. Overall, how many people do you think you have trained to date? _____ people

8. Please indicate where you perform your training (Check [X] all that apply):

   ❑ Public libraries ❑ Schools ❑ Community centers ❑ Other (Please specify): _____

9. Do you create any Sailor use documentation for users/course participants?

   ❑ Yes (If yes, please send a sample to John Bertot at the address above) ❑ No

10. In an average work week, please estimate the percentage of your time that is spent performing Master Trainer duties?
    _____ %

11. Does your library hold regular Sailor demonstrations for the public? ❑ Yes ❑ No

    If yes, are these demonstrations: ❑ Weekly ❑ Monthly ❑ Other (Please specify): _____

12. Please describe the two major challenges you face as a Master Trainer in providing Sailor training (e.g., adequate hardware, training facilities, etc.) (if needed, please continue your comments on the back side of this page):

    a.
    b.

Thank you for your participation. Please return the survey in the enclosed envelop.

SCHOOL LIBRARY MEDIA SPECIALIST SURVEY

The research team surveyed school library media specialists in the four original county case sites (Baltimore City, Harford County, Montgomery County, and Wicomico County) to assess school library media specialist use of the Sailor network. Specifically, the research team set out to:

- Measure school library media specialist Internet and Sailor network use.
- Gain an understanding of general technology issues in Maryland public schools.
- Determine barriers and success factors that contribute to school library media specialist use of the Internet in general and Sailor in particular.

Such a survey had never been attempted prior to the Sailor network evaluation study.

Survey Methodology

The number of public schools across the four case sites varied, with Harford and Wicomico counties possessing substantially fewer public schools than Montgomery County and Baltimore City. In all, Montgomery County and Baltimore City have approximately 180 public schools each, followed by Harford County with 43 public schools, and Wicomico County with 28 public schools.

The large size discrepancies in the number of case site public schools, and the limited resources of the research team, did not permit the research team to survey all public school media specialists within the Baltimore City and Montgomery County case sites. In order to attain the objectives of the school media specialist survey listed above, the study team:

- Surveyed all Harford and Wicomico County public school media specialists.
- Deployed a systematic random sample of public schools in Montgomery County and Baltimore City, selecting every third school to survey.

In all, 191 surveys were mailed in February 1996 to case site public schools, with 60 to each Montgomery County and Baltimore City, 43 to Harford County public schools, and 28 to Wicomico County public schools.

The sample frame used for public school selection was a listing of all public schools in the case sites provided by the Maryland State Department of Education (MSDE). MSDE also provided mailing labels for the schools. The unit of analysis was the school media specialist unit -- in the case of some schools, there were more than one school media specialist, in others, a school faculty member performed the duties of the school media specialist. In all cases, the research

team asked that the school media specialist unit coordinator (or equivalent) complete the survey. A postage-paid envelope, along with a cover letter explaining the purpose of the survey, was included with the survey to encourage a high response rate (see Appendix A for a copy of the survey; see Appendix B copies of the survey cover letters).

Of the 191 surveys distributed, 69 were returned for a response rate of 36%. Due to the limited time and resources of the research team, a follow-up was not conducted for this survey. Figure 1 presents the responses, by county, along with whether or not the responding schools were connected to the Internet.

Figure 1. School Library Media Specialist Response Rate and Internet Connectivity.

		Internet Connection	
Case Site	**Response Rate (%)**	**Yes**	**No**
Baltimore City	14.5% (n=10)	4	6
Harford County	39.1% (n=27)	17	10
Montgomery County	33.3% (n=23)	17	6
Wicomico County	13% (n=9)	3	6
Total	**36.0% (N=69)**	**41**	**28**

The uneven distribution of responses did not allow for a county-specific analysis. The research team, therefore, performed an overall analysis of the survey results.

The majority of respondents (n=50) were media specialists (72.5%). Eight librarians and one teacher completed the survey.

Overall, the respondents indicated that technical aspects, training, and funding were the most important factors that affected their involvement with the Internet in general and Sailor in particular (see Figure 2). Interestingly, issues related to student access were not considered as important -- Figure 2 demonstrates that approximately 21% of the respondents felt that the ability to block student access to materials such as pornography, was a very unimportant factor.

Figure 2. Factors Affecting School Library Media Specialist Involvement with the Internet/Sailor Network by Percentage.

n=60	Very Important	Important	Very Unimportant
Technology Infrastructure	89.3%	3.6%	7.1%
Availability of computer technical expertise	84.5%	8.6%	6.9%
Availability of staff time to develop Internet expertise	87.9%	6.9%	5.2%
Availability of funding to support Internet program	81.0%	10.3%	8.6%
Access policies (acceptable use policies)	58.6%	29.3%	12.1%
Ability to block student access (pornographic matter)	63.2%	15.8%	21.1%

Figure 3 indicates whether or not the school media specialists utilize the Sailor network for specific activities. The number of respondents are lower, partially, because they only reflect the library or schools currently connected to the Internet. School media specialists predominantly use the Sailor network for access to listservs/discussion groups with 74.2%, followed by electronic mail with 61.8%, Gopher sessions with 56.7%, bibliographic utilities with 43.3%, and World-Wide Web (Web) sessions with 36.7%.

Figure 3. School Library Media Specialist Use of the Sailor Network.

n=33	Yes	No
Electronic mail	61.8% (n=21)	38.2% (n=13)
Listservs/Discussion groups	74.2% (n=23)	25.8% (n=8)
Bibliographic Utilities	43.3% (n=13)	56.7% (n=17)
World-Wide Web sessions	36.7% (n=11)	63.3% (n=19)
Gopher sessions	56.7% (n=17)	43.3% (n=13)

This survey provided an opportunity to contrast Internet and Sailor data retrieval. Specifically, the instrument determined what types of electronic information school library media specialists retrieve as well as the intended use of such information (see Figure 4). According to respondents that possess Internet connections, Sailor network use is lower than general Internet use for all electronic information use except public library information. This use of the Internet may reflect, as respondents in other data collection activities noted, a confusion between general Internet and Sailor network resources -- the seemlesness of the Internet is problematic for users in determining the location of the resources they are using. Another factor potentially at play here is the large reliance, as indicated in Figure 3, of users on the Sailor network Gopher rather then the Sailor Web server. Different resources resided on the servers at the time of this survey.

Figure 4. School Library Media Specialist Types of Electronic Network Information Use via the Internet and Sailor Network by Percentage.

n=33	Internet		Sailor	
	Yes	No	Yes	No
Local government information	65.6% (n=21)	34.4% (n=11)	41.9% (n=13)	58.1% (n=18)
State government information	60.6% (n=20)	39.4% (n=13)	37.5% (n=12)	62.5% (n=20)
Federal government information	50.0% (n=17)	50.0% (n=17)	26.7% (n=8)	73.3% (n=22)
Health information	57.6% (n=19)	42.4% (n=14)	26.7% (n=8)	73.3% (n=22)
Business information	58.8% (n=20)	41.2% (n=14)	23.3% (n=7)	76.7% (n=23)
Encyclopedia	60.0% (n=21)	40.0% (n=14)	16.7% (n=5)	83.3% (n=25)
Public Library Information	34.4% (n=11)	65.6% (n=21)	54.5% (n=18)	45.5% (n=15)

The researchers were unable to meaningfully analyze other survey questions questions due to skipped responses. Some respondents indicated that they did not know the technological configuration of the school media labs and, thus, were unable to complete technology infrastructure-based questions.

Summary

The data from this survey demonstrate that school media specialists:

- Consider technology issues to be most important in influencing school media specialist use of the Internet in general and Sailor in particular. Indeed, 40.5% of responding specialists reside in schools that do not posses an Internet connection. The response rate was too low to determine whether there are discrepancies in the state as to public school Internet connectivity by case site.

- Are not necessarily technical experts and, thus, are unable to provide answers to school media technology infrastructure questions.

- Do not consider "acceptable use" policies as important in affecting school use of electronic networked resources.

- Use the Internet-at-large for information content and resources, rather than the Sailor network. It is unclear, however, as to whether respondents could distinguish between Sailor network content and other resources.

- Predominantly use the Sailor network for access to electronic discussion groups and electronic mail, and not for Sailor network content.

Together, these data demonstrate electronic network use in general and Sailor network use in particular has not yet made it into school library media centers. Readers, however, should consider that this survey reflects a small segment of the Maryland public school system, particularly with the low response rate. Moreover, Internet connectivity in public schools is continually increasing, especially due to the "NetDay" initiative designed to connect Maryland public schools to the Internet throughout September and October 1996.

Appendix A - Survey of Library Media Specialist Internet Use

Instructions: The purpose of this survey is to gain an understanding of library school media specialists' level of involvement with the Internet and Sailor. Please answer the questions below by marking the appropriate selection or filling in answers. Your responses will remain confidential and will in no way be attributed to you or your school. Thank you for your participation!

1. Name of person responding: _____ Title: _____
   Internet E-mail Address: _____

2. Please assess the degree to which the following possible factors affect your library's or school's current level of involvement with the Internet: (Please circle one number for each item)

	Very Important				Very Unimportant	Don't Know
a) Technology infrastructure (e.g., workstations, phone lines)	1	2	3	4	5	❑
b) Availability of computer technical expertise	1	2	3	4	5	❑
c) Availability of staff time to develop Internet expertise	1	2	3	4	5	❑
d) Availability of funding to support an Internet program	1	2	3	4	5	❑
e) Access policies (e.g., acceptable use policies for students	1	2	3	4	5	❑
f) Ability to block student access to some Internet-based information (e.g., pornographic material)	1	2	3	4	5	❑
g) Other (please specify): _____	1	2	3	4	5	❑

3. Interest in the Internet at your library or school is motivated primarily by: (Check [X] one only)

❑ Library strategic planning ❑ Interest of the school board ❑ School staff expertise
❑ School system strategic planning ❑ Community interest ❑ Other (please specify): _____
❑ Student interest

4. Is your library or school currently connected to the Internet in any way?

❑ Yes (If yes, please complete questions 5-12) → Does the library media center access the Internet through the: (Check [X] all that apply)
❑ No (Please return the survey in the enclosed envelope. Thank you for your participation!) ❑ School Internet connection
❑ Library Internet connection

5. Please describe your use of the Internet in a typical week: (Check [X] one only)

❑ Never ❑ 1-5hrs/wk ❑ 6-10hrs/wk ❑ 11-15 hrs/wk ❑ >15 hrs/wk

6. Please ESTIMATE the number of times you use the following types of Internet activities in a typical week AND indicate whether you use the Sailor network for the activities: (Check [X] one for each question):

	FREQUENCY OF ACTIVITIES				SAILOR NETWORK USE	
	Never	< 15 times	16-25 times	> 25 times	Yes	No
a) Electronic mail	❑	❑	❑	❑	❑	❑
b) Listservs/Discussion groups	❑	❑	❑	❑	❑	❑
c) Bibliographic Utilities (e.g., accessing card catalogs)	❑	❑	❑	❑	❑	❑
d) World-Wide Web sessions	❑	❑	❑	❑	❑	❑
e) Gopher sessions	❑	❑	❑	❑	❑	❑
f) Other (please specify): _____	❑	❑	❑	❑	❑	❑

OVER

7. Please describe the types of information you access through the Internet AND indicate whether you use the Sailor network for the activities: (Check [X] two for each item):

		INTERNET USE		SAILOR NETWORK USE	
		Yes	No	Yes	No
a)	Local government information	❑	❑	❑	❑
b)	State government information	❑	❑	❑	❑
c)	Federal government information	❑	❑	❑	❑
d)	Health information	❑	❑	❑	❑
e)	Business information	❑	❑	❑	❑
f)	Encyclopedia information	❑	❑	❑	❑
g)	Public library information	❑	❑	❑	❑
h)	Other (please specify):	❑	❑	❑	❑

_____

8. Please describe the purposes for which you use the Internet AND indicate whether you use the Sailor network for these purposes: (Check [X] all that apply)

		INTERNET USE		SAILOR NETWORK USE	
		Yes	No	Yes	No
a)	As a reference tool	❑	❑	❑	❑
b)	To train users on the Internet	❑	❑	❑	❑
c)	To demonstrate the Internet to users	❑	❑	❑	❑
d)	Curriculum resource	❑	❑	❑	❑
e)	Personal use	❑	❑	❑	❑
f)	Other (please specify):	❑	❑	❑	❑

_____

9. If you perform Internet training, please indicate the types of people you train: (Check [X] all that apply)

❑ Students ❑ Teachers ❑ Parents ❑ Community members ❑ Other (Please Specify): _____

10. Please identify some of the reason(s) you do not use the Sailor network more than you currently do: (Check [X] all that apply)

❑ Irrelevant content (e.g., lack of information you need for reference or other purposes)
❑ In-library technology infrastructure (e.g., workstations, modems, phone lines)
❑ Response time of network (e.g., slow access time to wanted information)
❑ Availability of connections (e.g., busy signals)
❑ Availability of help with Sailor (e.g., training, technical support)
❑ Lack of a graphical interface to Sailor (e.g., using Lynx to access Web resouces)
❑ Other (Please specify): _____

11. What type of connection to the Internet AND maximum connection speed does your library or school have?

(Check [X] all that apply)

❑ Terminal access (e.g., via text only [non-graphical] access -- no ability to view graphics on the Internet)
❑ Graphical access (e.g., Windows PCs or Macs -- ability to view graphics on the Internet)

→ **(Check [X] one only)**

Maximum Speed
❑ 9600 bits per second or less
❑ 14,400 bits per second
❑ 28,800 bits per second or greater
❑ Other (Please Specify): _____

12. Overall, how would you rate your Internet navigation skills? (Check [X] one only)

❑ Below Average ❑ Average ❑ Above Average ❑ Excellent

THANK YOU FOR YOUR PARTICIPATION. Please return this survey in the enclosed envelope

Appendix B - School Media Specialist Survey Cover Letter

Maryland State Department of
EDUCATION

Schools for Success

Nancy S. Grasmick
State Superintendent of Schools

200 West Baltimore Street
Baltimore, Maryland 21201
Phone (410) 767-0100
TTY/TDD (410) 333-6442

MEMORANDUM

TO: Baltimore City Schools Library Media Specialists

FROM: Rivkah Sass, Division of Library Development and Services
Maryland State Department of Education

SUBJECT: SURVEY OF LIBRARY MEDIA SPECIALIST INTERNET USE FOR SAILOR ASSESSMENT

We would like to ask your cooperation in assessing the impact of the Internet and Sailor on citizens and librarians in Maryland. I hope you will agree to help.

Sailor has been operational in Maryland for over a year now. It is critical for us to determine how to proceed with development of the network, the value it has to our communities, and how people are using it and the Internet. To this end, we are working with the Maryland Institute for Policy Analysis to conduct an assessment of Sailor and to develop tools to help us measure its impact and need for change.

Four target areas have been identified for in depth study. These include Baltimore City, and Harford, Montgomery and Wicomico counties. Our consultants have conducted focus groups and are gathering data in various ways from these communities. The enclosed survey is one of the methods being employed to gather information.

Would you kindly take a few moments to answer these questions? A postage-paid envelope in included for your convenience.

If you have any questions, please contact John Carlo Bertot, Department of Information Systems, University of Maryland Baltimore County, 410-455-3883.

Thank you for your assistance.

cc: Dr. Walter G. Amprey, Superintendent
Michael Pitroff, School Media Supervisor
Dr. Nancy S. Grasmick